The RUBBER AGE

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LATE NEWS of the Industry

Rubber Manufacturers Association Urges Industry to Retain Workers

DIRECTORS of the Rubber Manufacturers Association, Inc., meeting at New York City on September 10, gave earnest consideration to the question of unemployment in the domestic rubber manufacturing industry. The board unanimously adopted a resolution to the industry that, in order to give employment to the greatest number of people, every effort be made by all rubber manufacturers to maintain the present forces, even if a reduction in hours becomes necessary, this policy to apply to all classes of employes.

Rubber factory officials at Akron and other centers have added their individual endorsement to the recommendation of the association and in several cases had signified their intention of taking such steps before the action of that organization. Earlier this month P. W. Litchfield, president of the Goodyear Tire & Rubber Company, issued a statement to the effect that his firm "is attempting to peg unemployment at its present level" to assure workers of steady jobs through the winter. A two-week vacation without pay for every worker some time between October and February is part of the plan.

James D. Tew, president of the B. F. Goodrich Company and president of the Rubber Manufacturers Association, reported his firm to be solidly behind the action taken by the association. "It was agreed," he said, "to recommend to members that one of the major problems faced by the rubber industry is the necessity of retaining so far as possible the present force of workers, even if eventually a reduction in working hours becomes necessary to accomplish this end. However, as all major rubber companies already have given serious consideration to this situation, it is believed by the officers and directors of the association that the proposal to the industry will result in the benefits it is intended to accomplish."

"This policy has been adopted at the Seiberling Rubber Company," W. S. Wolfe, executive vice-president and factory manager, announced. "Every effort will be made to hold the present personnel. We will work shorter shifts and less days when necessary." A brief statement from the General Tire & Rubber Company said that officials of that firm "had planned to do this anyway."

The India Tire & Rubber Company statement said: "India, which has maintained its 1929 salary and wage scales, has found its labor most receptive to shortened hours during slack times. Such a procedure was inaugurated in 1930 and will continue through the coming winter; so there will be no reduction in personnel."

F. C. Millhoff, vice-president of the Master Tire & Rubber Corporation, which controls the Falls, Cooper and Giant plants, said: "For the past year we have been operating at capacity. Our business has increased each month during that period. We do not anticipate any appreciable reduction in our manufacturing schedule and, therefore, do not anticipate any appreciable reduction in our factory personnel. We fully expect to maintain our present force all through the winter season.

"I think the plan is a good one," he added in regard to the association recommendation, "and one that should be

Scanning the Headlines

Industry leaders make plans to alleviate unemployment in what Mr. Firestone predicts will be the hardest winter we have experienced . . . . GOODYEAR *decides on two-week payless vacations as a means to that end . . . . August factory activity, measured by crude rubber consumption, was the lowest for that month since* 1923 *. . . .* GOODRICH *passes preferred dividend, shifts executives . . . . July tire shipments were higher than last year's . . . .* UNITED STATES *merges advertising and commercial research divisions . . . . Tire export markets present unfavorable picture . . . .* PANCO *will expand its heel and sole factory . . . . William O'Neil sees rise in crude rubber prices due . . . .* NATIONAL-ERIE *effects reorganization . . . . Coast tire plants increase sales volume . . . .* LAWSON RUBBER *to move from Texas to New Orleans . . . . Company securities are depressed to new lows along with rest of market . . . . Distribution census found* 52,057 *domestic tire outlets in* 1929.

productive of excellent results if strictly followed throughout the industry. It would work wonders in our industrial employment situation if all industry followed this lead."

Goodrich Omits Preferred Dividend; Company Shifts Executive Officers

MEETING at New York City on September 8, the board of directors of the B. F. Goodrich Company decided to postpone action in the dividend due October 1 on the company's 7 per cent preferred stock, payments on which had been continued unbroken since 1912. The company had previously reported a net loss of $288,483 for the first half of 1931 and a deficit after dividends of $1,371,313.

The company's surplus account was brought down from $19,188,628 on June 30, 1930, to $7,536,421 as of the same date this year. The surplus account stood at $8,900,278 on January 1, 1931, and showed the addition of $36,200 as the difference between cost and par value of preferred treasury stock purchased for redemption. In addition to the net loss of $288,483 and the payment of $1,082,830 in the first six months, it shows sundry adjustments not relating to operations of the current year of $28,744, bringing the surplus to the figure of $7,536,421.

"While for the past several months," a statement issued after the directors' meeting said, "earnings after interest, but before inventory write-down have exceeded preferred dividend requirements, and while the company has held its portion of the total sales of the industry, the board, because of the uncertainty in commodity markets and in general business decided to defer payment of the October first preferred dividend."

The directors at their meeting also voted approval of several major changes in the organization of the company's executive personnel. Samuel B. Robertson, vice-president and general manager of the Pacific Goodrich Rubber Company, Los Angeles, Cal., will return to the Akron factories as vice-president and general manager of the tire division. T. G. Graham, vice-president, was placed in charge of engineering, processing development, research laboratories and all other general factory service divisions. In addition, he will direct production of the Martha Mills, fabric manufacturing subsidiary at Silvertown, Ga., and production of Canadian Goodrich, Ltd., Kitchener, Ont.

T. G. GRAHAM

T. B. Farrington, general manager of the factory service division in Akron, was appointed vice-president and general manager of Pacific Goodrich, succeeding Mr. Robertson.

Mr. Robertson was born at Milton, Mass., July 21, 1878, and was graduated from the Massachusetts Institute of Technology in 1899. He then joined the Pennsylvania Railroad, where his ability as an engineer and an executive was recognized, and he was appointed division engineer and later superintendent, and finally general superintendent at Toledo for the central system. He joined the B. F. Goodrich Company in 1919 as assistant to the works manager and then became director in engineering, going to California after supervising the construction of the plant there.

Mr. Farrington, who was also a division superintendent of the Pennsylvania Railroad before coming to Goodrich, was retained by the rubber company in 1927, served as chief engineer and was made general manager of the factory service division two years ago.

Thornton G. Graham was born at Lee, Mass., January 30, 1899, and was graduated from Princeton University in 1914 as a civil engineer. In the same year he joined the Goodyear Tire & Rubber Company and later worked with the Falls Rubber Company, Inland Rubber Company and Mason Tire & Rubber Company before joining Goodrich in 1925. His advance there was rapid and he was named first vice-president in March, 1928.

July Shipments of 5,461,908 Casings Higher Than for Same Month in 1930

SHIPMENTS of pneumatic casings by domestic manufacturers for the month of July amounted to 5,461,908 units, a decrease of 2 per cent under June this year but slightly higher than the July, 1930, shipments of 5,447,295 casings. The July shipments were the largest for any month since September, 1929, with the exception of the heavy June total of 5,571,886 units, according to statistics released by the Rubber Manufacturers Association, Inc.

The association reports production of all types of pneumatic casings for July to have been 4,926,484 units, a decrease of 13.2 per cent as compared with June this year, although 23.4 per cent higher than July of last year, when only 3,991,321 casings were turned out. Pneumatic casings on hand July 31st amounted to 9,919,456 units, the lowest figure since last February and representing a decrease of 5.1 per cent under June and 16 per cent below July 31, 1930.

Inner tube shipments were again heavier than production in June, lowering inventories in manufacturers' hands to the smallest figure since last January. In that month, there were 4,955,217 inner tubes produced and 5,831,205 tubes shipped, leaving stocks of 9,589,751 inner tubes on hand. This compares with 10,504,251 tubes at the end of June. For the seventeenth consecutive month solid and cushion tire shipments exceeded output, bringing stocks to the lowest level in years, despite the fact that production was the highest since October, 1930.

The tire industry is estimated to have consumed a total of 58,371,156 pounds of crude rubber and 18,924,711 pounds of cotton fabric during the month of July in the manufacture of all types of tires and tubes.

The association's estimates are based on reports furnished by manufacturers who produce approximately 80 per cent of the total for the United States, but have been adjusted to represent 100 per cent in the figures which are quoted above.

Exports of Automotive Rubber Goods Totaled $1,892.281 in Month of July

EXPORTS of automobile tires, inner tubes, tire sundries and repair materials from the United States during the month of July had a total value of $1,892,281. Belgium was the chief market for passenger car casings, while British India was the principal destination for shipments of bus and truck casings and of inner tubes. In the month 131,707 passenger car casings were exported with a value of $1,026,439 and 30,996 truck casings, worth $555,369, the latter figure reflecting an appreciable falling off from previous months.

Rubber boots exported during the month totaled 82,010 pairs with a value of $190,685 and rubber shoe shipments numbered 58,326 pairs with a value of $49,200. Exports of canvas rubber-soled shoes amounted to 145,050 pairs, valued at $88,499. Denmark was the leading market for rubber boots, while Norway was the chief customer for rubber shoes. Chile took the greatest number of canvas rubber-soled shoes, but the value of those shipped to Panama was higher.

Shipments of rubber belting in July amounted to 350,345 pounds, worth $145,664, and exports of rubber hose totaled 501,415 pounds with a value of $148,251. The United Kingdom was the principal market for the former and France for the latter.

During July, the United States exported 928,780 pounds of reclaimed rubber, valued at $40,610, or 4.37 cents a pound as against an average value of June exports of 4.49 cents a pound, and 5,115,503 pounds of scrap and old rubber, worth $98,648. Spain continued to be far ahead of all other markets for rubber scrap, while Canada led the United Kingdom as a customer for reclaim, with smaller amounts going to Argentina, Mexico, Germany and the Union of South Africa.

United States Rubber Consumption Fell Off in August to 27,586 Tons

CONSUMPTION of crude rubber by manufacturers in the United States for the month of August is estimated to have been 27,586 long tons as compared with 31,937 long tons for July and 30,575 long tons for August, 1930, according to statistics released by the Rubber Manufacturers' Association.

Imports of crude rubber for August amounted to 38,370 long tons, a decrease of 6.4 per cent under the July figure of 41,004 long tons, although 10.3 per cent above August, 1930, according to the association's own estimates.

The association estimates total domestic stocks of crude rubber on hand August 31st, at 240,816 long tons, an increase of 2.5 per cent over July, and 51.8 per cent over August 31, 1930. This marks a new peak for stocks in this country.

Crude rubber afloat for the United States ports on August 31st is estimated at 61,469 long tons as against 66,873 long tons on July 31st and 61,168 long tons on August 31, 1930. The total visible stocks on hand and afloat to the United States, therefore, rose to 302,285 long tons, a new all-time high mark and equal to over 81 per cent of the country's consumption in the full year of 1930.

Tire Factories on the Pacific Coast Show Heavy Increase in Sales Volume

HEAVIER replacement demands and extensive advertising campaigns are credited with causing a higher sales volume among the Los Angeles tire factories, according to a survey of the various plants. Sales are running higher than a year ago. July was a good month for tires, and August showed gains over July. Executives anticipate September will be the largest month in 1931 from the standpoint of sales.

Goodyear Tire & Rubber Company has resumed operations after having been practically closed down for a week for vacations. Production schedule calls for 7,000 tires and 7,000 tubes daily. To date production has been slightly higher this year than 1930, while production for the entire calendar year is expected to be about the same as 1930. There are a few less employes on the pay roll than a year ago, there now being about 2,200.

Pacific Goodrich Rubber Company's July sales showed a material increase over June, bringing the total for the first seven months substantially ahead of 1930 period to that date. August showed an increase over July and the company executives expect September to be the largest month of the year.

The Pacific Goodrich plant is producing 3,000 tires and 3,500 tubes daily, slightly higher than last year. There are about 640 employes on the pay roll, showing no material change from last year.

Firestone Tire & Rubber Company is producing 6,000 tires and 6,000 tubes daily, slightly under production schedule in 1930. However, the schedule will probably be stepped up in the next two months. There are 1,300 on the pay roll, compared with 1,500 last year.

Samson Corporation, division of the United States Rubber Company, is producing 3,800 tires and 4,000 tubes daily. There are 800 employes on the pay roll.

Goodyear Company Employes Will Take Two-Week Vacations to Aid Employment

OFFICE and salaried people at the Goodyear Tire & Rubber Company will take two weeks vacation without pay between October 1 and February 1, as part of the plan to prevent lay-offs and to spread work among the largest number of people.

In announcing the plan, P. W. Litchfield, president of the Goodyear company, stated his belief that business recovery would be retarded as long as a great number of people were unemployed, and that finding work for men was necessary if the dole were to be avoided.

"Since there are not enough jobs to go around, we must spread the jobs there are out so as to put as large a number of men as possible in an earning position.

"The easiest thing for a corporation to do under these circumstances is to lay men off in proportion to the work to be done. From the standpoint of the men retained that too would seem the best thing. But there is no security for the individual or the corporation in that situation.

"If some men are earning full wages and many others nothing at all, we may be quite sure that the men now working will presently have to be drawing against their wages, through taxation or otherwise, to support those who are unemployed."

Mr. Litchfield had announced last month in respect to factory men that the effort would be made this winter to keep every worker on the job, taking up the winter slack in production by shorter hours. The present announcement applies this principle to executives and office people.

Notice to Canadian Subscribers

PURSUANT to the conditions imposed by the Canadian Tariff on Publications, as passed by the House of Commons on July 28, 1931, the Canadian subscription rate to THE RUBBER AGE, effective September 1, 1931, is increased $1.20 yearly (5 cents per issue). The new rate will therefore be $3.70 yearly. This increased rate will only affect present subscriptions which expire after April 1, 1932, in which case that portion of such subscriptions which extend beyond that date will be billed at a higher rate on a pro-rata basis. All subscriptions expiring from this date on will only be renewed at the new rate.

***Publishers,* THE RUBBER AGE.**

New York, September 1, 1931.

NOTICE TO UNEMPLOYED—See Announcement on Page 568.

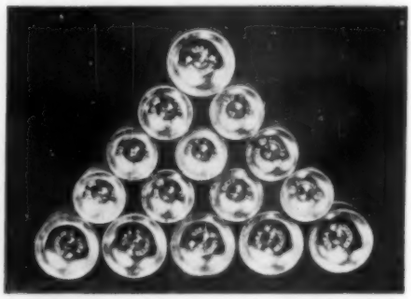
(Other news of the industry will be found on Pages 563-568)

Growing Use of CHROMIUM

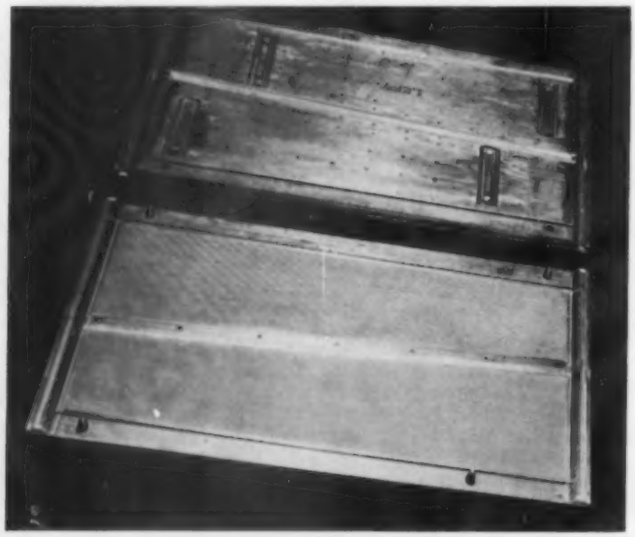
Economies Effected by Use of Chromium Plating for Mill Rolls, Tuber Screws, Molds, Mandrels and Other Equipment Due to its High Resistance to Wear and Corrosion

DEVELOPMENT of science and art always moves forward at an accelerated pace in a crisis. The familiar saying "Necessity is the mother of invention" comes to us forcibly in strenuous times whether they be periods of war or economic depression. In the emergency of the Great War, four years concentration under the urge of necessity set medicine and surgery ahead by 100 years. Similarly today because of the world wide depression, brains are sharpened and energy is not misplaced. It is necessary that many of us who are waiting for the business slump to blow over and pass our doors, to question ourselves as to whether we are now ready with something to give to industry to hasten the return of normal activity. Are we likely to find our activities aligned with those which represent progress such as for example the rayon industry, radio and television, and electric refrigeration or with those industries these have replaced and are now back numbers?

In the chomium plating industry, advance was threatened by the advent of stainless alloys. The chromium plater therefore during the past two years when all industry has been subnormal, has been actively concerned with the principles of the "survival of the fittest." Chromium plating as introduced to the general public for decorative purposes, was enthusiastically received because it offered permanent non-tarnishing lustre. When engineers came more and more in contact with chromium plate, they began to observe that its chemical and physical properties suggested its use in numerous industrial applications for the resistance to wear and resistance to corrosion. It is with the applications in the rubber industry where chromium plating has introduced economies, where the use of chromium plate has proved legitimate that this paper is concerned.



Hard Rubber Molds Plated to Improve Finish on Products



Running Board Mold Plated to Reduce Wear, to Keep Mold Clean and Free from Sticking

Chromium plating has reduced cost both in the initial expense of rubber machinery and equipment and also in the maintenance. It has been possible to substitute chromium plate on ordinary steel in place of costly alloys, often introducing a margin of economy in favor of the chromium plate as high as 3 to 1. Chromium is applied to ordinary steel, or other metals, for wear resistance in place of hard alloys; the same being true as a possible substitution in applications where heretofore expensive corrosion resistant alloys were employed.

Chromium plated rolls are to be seen in most of the large rubber mills of the country today. This application, as the others discussed in this paper, is a deposit of chromium of considerable thickness, directly upon the steel with no undercoatings of copper or nickel. Chromium must be hard as deposited under conditions of temperature control and current density, so as not to scratch but to resist abrasive wear. It must not flake, chip or peel but must have excellent adhesion to the base metal. It must be a dense non-porous plate to provide complete corrosion resistance.

The thickness of chromium which is commonly used on

PLATING *in the* RUBBER INDUSTRY

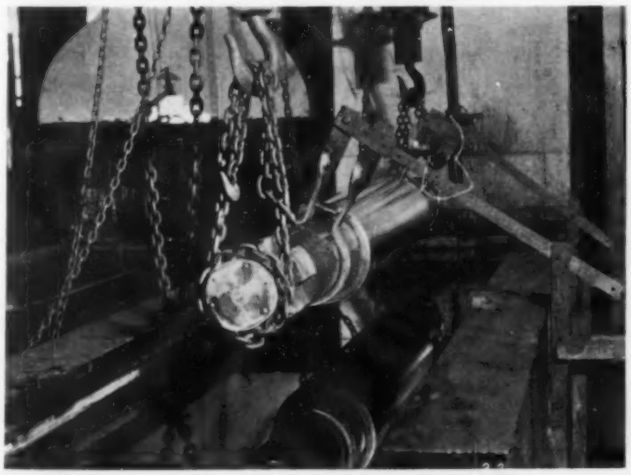
By NEVIN HAL MCKAY,

Metallurgist,
U. S. Chromium Corporation,
Pittsburgh, Pa.

Tuber Screw Plated to Resist Wear and Corrosion, to Reduce Sticking and Facilitate Cleaning

rolls used in the rubber industry is on the order of 3 mills which represents .006" chromium on the diameter of the roll. Much of the early work in chromium plating which was done on rolls was for applications in the paper industry or in the metal industry where requirements were extremely exacting so that it is possible today to plate rolls with a deposit which is uniform over the entire area of the roll.

The chromium plating of tubers has shown average results, tabulated over periods of the three years, that produced an increase of about 250 per cent for an increased cost of only 30 per cent. Good results can be obtained by plating either the tuber screw or the cylinder; however, it is generally not desirable to plate both pieces because the chromium is so hard that unless the surfaces are glass smooth, we have action similar to file against file. One of the most complicated jobs the author has ever seen in chormium plating was the handling of a tuber screw on which there were two individual threads, the pitch of each varying in arithmetical progression. The plating of this screw was difficult because not only the flight of the screw was plated but also the pitch or inside area. It may be explained here for those who have had little experience with chromium plating that the object which is plated must be so spaced from the source of current, which must be a conforming anode, that the current density will be uniform over the entire area which must be plated with a uniform thickness of deposit. This is similar to the use of templates or jigs in other industries and has considerable bearing on the cost of chromium plating. As compared with other branches of metal finishing, chromium plating is very expensive and its use is limited to applications which justify the cost. Its use is prevalent in cases under which the wear must be held within close tolerance or where the corrosion can make advantage of the inert chemical nature of a chromium deposit.



8,000 Pound Roll Plated to Resist Wear and Pitting by Corrosion. Also to Prevent Contamination of Rubber from Foreign Matter

In the rubber industry, as in allied fields such as in bakelite or celluloid industries, the use of chromium has become widespread because chromium has the physical property of very low surface tension which prevents the chromium from becoming wetted by the materials with which it comes in contact. This property gives it the advantage of non-sticking and eliminates in many applications, the necessity of lubrication, cleaning, or frequent polishing.

Advantages of Chromium Plating

Records tabulated over the past three or four years have shown positive results in the molding of both hard and soft rubber. In some cases, total mold cost of chromium plated molds has only been 20 per cent of the cost of unplated molds; so that the molds cost per piece in the case of chromium plated molds only 20 per cent of that produced by the ordinary mold. Savings are explained by the fact that the chromium is hard so that the mold does not wear. Chromium resists not only the abrasive wear from the molding operation but also resists considerable scratching and abuse. The chromium prevents the loss of scrap due to material sticking in the mold and it saves both the cleaning and repolishing of molds. Chromium has further become known as the metal lubricant and has eliminated or reduced the use of every lubricant which we have come in

contact with whether it has been oil, pumice, soap or sulphur.

The use of chromium on the hose mandrels or poles has again eliminated sticking and the use of lubricant. It has made it possible to do away with the use of the air hose which had been used to free the rubber from the pipe. It has also been successfully used on gaskets or washer poles where the chromium has been used not only because of its physical properties, but also where the chromium has been used as a means of delivering the mandrels exactly true to size with a wear resisting surface which will remain true. Chromium plated mandrels have been delivered where the plating has been as heavy as .005" on diameter and held within a tolerance which is read out to the fourth decimal.

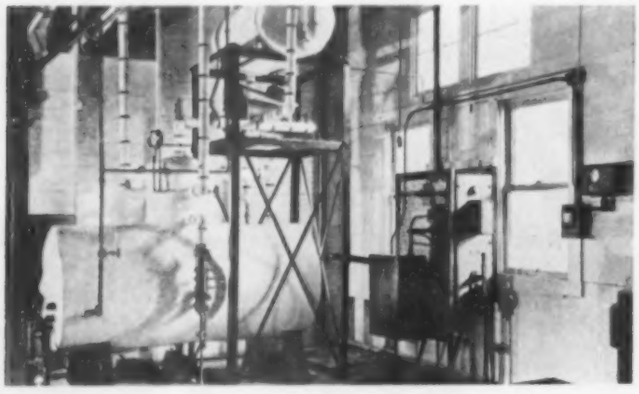
A practice common in asbestos and the bakelite industry, the use of chromium on pump plungers which are used on hydraulic presses has been justified by the increase life of same. Also, chromium on drills and taps has been found worthwhile because the chromium imparts to the drill the low coefficient of friction of chromium which is only 30 per cent that of steel, thereby preventing the jamming of the drill and speeding the rate of production. A very light coat of chromium on drills and taps has increased their life in some cases from a few hours to several days.

In conclusion, the author wishes to point out that the chromium engineer cannot come into your rubber plant with a sample of chromium plating as a cure for some of the operating difficulties. Chromium platers are not expert rubber men, however, and an understanding of the problems in hand will be of considerable assistance to both the rubber engineer and the electro-chemist.

G. E. Electric Steam Generators

THE General Electric Company announces a line of electric steam generators for application anywhere in industry where steam is needed but is not available in sufficient quantities or at suitable pressure. The line includes two pressure ratings, 100 and 200 pounds, in various sizes and electrical ratings.

The standard unit consists of a suitable steel container in which one or more helicoil sheath-wire immersion heaters, depending upon the capacity required, are inserted. The generator is provided with standard boiler fittings, in-



cluding a safety valve, steam gauge, water column, blow valve, steam valve, etc. A typical control equipment consists of a magnetic switch and an automatic pressure governor which, when operated in conjunction with a low-water alarm, automatic heat-shut-off switch and some device for automatically feeding additional water to the generator, makes the equipment completely automatic in operation and obviates any necessity of supervision except for the periodic inspection ordinarily given to any electric apparatus.

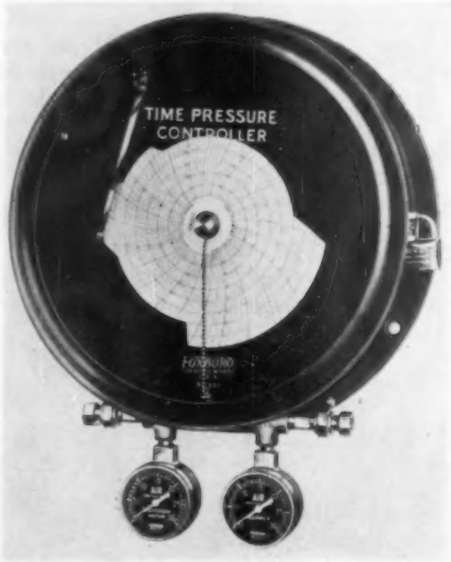
Many applications are listed for this equipment by the manufacturer, including: cavity vulcanizers, core vulcanizers, hydraulic vulcanizing presses and other rubber machinery units.

Advantages as listed by the manufacturer include the following: no stacks or flues required; completely automatic operation obtainable (no necessity for firemen or engineer); can be built into the device to be heated eliminating piping and radiation losses; low maintenance; quick heating—usually much faster than a fuel-fired boiler; no fuel storage or space for same required; no fumes of combustion, hence better working conditions; no ashes to be removed, hence no dust; compact—can be mounted on ceiling, side wall or floor; reduced fire hazard and lowered rate of insurance—no conflict with building or underwriter's codes; economical in operation; low-water explosion hazard eliminated; very accurate temperature control—within 2 or 3 degrees F.; steady load at unity power-factor, and units meet specifications of A.S.M.E. boiler-construction code.

Foxboro Non-Recording Time Controller

THE Foxboro Company of Foxboro, Mass., offers a new instrument for controlling temperature or pressure in relation to time. This instrument, known as the Non-Recording Time Controller, will maintain a predetermined cycle of operation in any process involving temperature or pressure.

The instrument is similar in appearance and construc-



tion to the standard Foxboro recorder-controller. The major difference between the two instruments is that the non-recorder has a printed aluminum cam instead of a paper chart and a specially designed cam follower in place of the pen arm. This construction has made it possible to obtain a 1 to 1 ratio between the cam reading and control point setting, thus maintaining the control point without the use of multiplying devices of any kind.

The cam is a printed aluminum disc the size of a standard Foxboro 10" chart. The markings are printed by a special process from plates similar to those used in the printing of Humitex charts. This feature makes the use of the instrument particularly flexible since new cams to meet changed conditions can easily be cut by the user with a pair of shears and a file.

Foreign Market for AUTOMOBILE TIRES

An Official Survey of the Leading Countries of the World and Competitive Conditions Surrounding Tire Trade—Total Exports Have Declined Sharply

A Distributor of American Tires in Barcelona, Spain

UNITED STATES exports of automobile tires to European countries amounted to 436,017 valued at $4,540,116 in the first six months of 1931, compared with 566,261 valued at $6,826,923 for the same period of 1930—declines of 23 per cent in quantity and 33 per cent in value, according to reports of the Department of Commerce. At first inspection these figures appear far more disappointing from the viewpoint of the American tire exporter than is revealed by further analysis. The variance between the decline of 23 per cent in tire exports by quantity and the 33 per cent decline in value may be explained as the result of price cutting caused by the severe competition offered by Europe tire manufacturers—such a decline in value not being in evidence in other world tire markets. Furthermore, there were six European countries —Czechoslovakia, Denmark, France, Sweden, Switzerland, and Yugoslavia—to which the United States exported a grater number of automobile tires in the first six months of 1931 than in the same period of the previous year.

European Markets

The following summaries have been prepared from recent reports submitted by consular and commercial officers stationed in European countries:

Austria.—Sharp competition prevails. The Semperit-Reithoffer (Austrian-made tires) is obtaining 50 per cent of the business. Tire exports from Austria are shrinking, owing to the business situation in export markets; and future prospects are poor.

Belgium.—Prices are at unprofitable levels; the Englebert (Belgian-made) dominates trade, with competition from Michelin. American tires are obtaining 48 per cent of the trade.

Czechoslovakia.—The United States exported 20,441 automobile tires to Czechoslovakia in the first six months of 1931, compared with 17,846 in the same period of 1930—a 14.5 per cent increase. Matador and Continental are offering keen competition. Dealers' tire stocks are about normal, and future prospects are fair. Prices increased 10 per cent on July 10.

Denmark.—Second line tire prices were reduced 20 per cent in May to meet Pirelli competition. United States tire exports to Denmark totaled 99,949 in the first six months of 1931, compared with 81,292 in the same period of 1930. Dunlop and Michelin are offering the chief foreign competition, by volume of sales.

Estonia.—Treuolnik (Russian) tires are offering severe price competition. Stocks are slightly above normal. Semperit tires were recently introduced.

Finland.—The market is dull and the business situation not bright. Englebert is offering the chief foreign competition. Finnish tire imports were down about 36 per cent in quantity in the first six months of the year.

France.—Tire sales are lower. Michelin, Dunlop, French Goodrich, and Englebert are offering the leading foreign competition. Stocks are high and future prospects not bright, owing to business depression. United States tire shipments to France totaled 15,341 in first six months 1931, compared with 12,546 in same period last year.

Germany.—The market is demoralized by price-cutting and the heavy discounts of Continental and Dunlop, and future prospects are not bright.

Italy.—Pirelli reduced prices by 5 per cent on April 20, followed immediately by Michelin and Englebert—precipitating a struggle for low price supremacy.

Lithuania.—Price-cutting and discount slashing are taking place, and the market is disorganized. Resinotrust, Continental, Michelin, and Dunlop are very active. Dealers' stocks are slightly above normal. Bright prospects exist for increased business in summer and early fall.

Netherlands.—Prices were reduced by 15 per cent on July 7. Tire imports were off about 40 per cent in current year. Englebert and Michelin are in strengthened positions. Stocks are not unduly high, and the latter part of year probably will show improved business conditions and better tire sales.

Poland.—Sales are down 50 per cent. Michelin, Englebert, and Pirelli are in strengthened positions at the expense of Dunlop and American makes. Future prospects are not promising.

Portugal.—Tire imports are down about 35 per cent. Engelbert, Dunlop, and Michelin are offering keen competition. Sales were good during the early summer, and future prospects are dependent upon improvement in economic situation.

Spain.—Engelbert and Pirelli increased prices in June by about 10 per cent. American tires are leading the market, although prices are unprofitable. Heavy stocks in Freeports are on hand.

Switzerland.—Competition is heavy. United States tire exports to Switzerland in the first six months, 1931, totaled 17,527 valued at $353,692, against 14,563 valued at $195,943 in the 1930 period.

United States pneumatic automobile tire exports to Latin American markets amounted to 241,601 valued at $2,292,331 in the first six months of 1931, compared with 384,235 valued at $3,834,595 in the same period of 1930, a decline of 37 per cent in quantity and 40 per cent in value. These serious trade reverses are attributable to the international economic situation and not to foreign competition, for recent trade reports are unanimous in their statements that American tires predominate in Latin American markets.

Latin American Markets

The most outstanding tire trade decline was not caused by business conditions entirely, however, but by the operation of the two foreign branch plants of American tire companies in Argentina, causing a tire export loss of 65 per cent in the period under discussion—United States tire exports to Argentina having amounted to 37,518 in the first six months of 1931, against 106,266 in the corresponding period last year.

Argentina.—Two Argentine branch plants of United States tire companies operating in Argentina and business depression are held directly responsible for a loss of 65 per cent in United States tire trade with Argentina in the first six months of the year. Future prospects are not bright for continuance of export tire trade—especially as Pirelli is reported to be installing tire building machinery in its Argentine plant.

Bahamas.—Tire prices and discounts remained unchanged in the second quarter of the year. Three American makes and Dunlop are doing a fair business. Imports of auto and bicycle tires amounted to a value of $3,059 for the June quarter, compared with $3,893 for the same period of 1930 and $3,819 in 1929.

Bolivia.—The tire market is considered to be overstocked to the extent of about $36,000. Automobile and accessories dealers are observing great caution in placing orders. Foreign competition met consists of Dunlop, Continental, Peters Union, and Michelin.

Brazil.—Tire sales are at low levels of previous months. American tire sales in the first six months are about 77 per cent of the total, with that of leading foreign competition as follows: Dunlop 11, Michelin 9, Pirelli 2, and Englebert 1 per cent.

Chile.—A price increase of about 20 per cent became effective April 10, owing to increased import duties. The outlook for the immediate future is unfavorable. Dunlop is offering principal foreign competition.

Colombia.—Tire sales are inactive, liquid cash scarce, and trade possibilities are reduced to a minimum. American makes predominate, with Dunlop obtaining about 10 per cent of the trade.

Costa Rica.—The tire situation is very dull, and competition has forced prices to almost unprofitable levels—some dealers selling below cost and others liquidating stocks in order to retire. Eight different brands of American tires are being sold.

Cuba.—Tire imports are down about 45 per cent in first six months. Purchases are for immediate needs. American companies are maintaining their share of business. Future prospects are dependent upon improvement in political and business conditions.

Ecuador.—Practically all automotive vehicles, accessories, and tires are of American manufacture in this comparatively small market. Future sales prospects are dependent upon improvement in general economic conditions, and the immediate outlook is not bright.

French West Indies.—The use of American tires has increased during the past year. Michelin is the principal foreign competitor, carrying large stocks in bond at Fort de France for distribution throughout the Carribean area.

Mexico.—Tire prices were increased by 30 per cent in July, as protection against losses by depreciation of silver peso. Local manufacturers are increasing advertising, in hope of securing an increased share of trade. Future prospects are dependent upon business recovery.

Nicaragua.—It is believed that it will be many months before dealers will be interested in importing other than bare necessities. Although Managua dealers lost most of their stocks in the earthquake, importers of automotive products in other communities are reported to be well stocked.

Peru.—Heavy tire sales took place in January in anticipation of a price change, followed by a sales slump in February, March, and April; sales in May and June showed improvement. American tires obtain 73 per cent of the trade, foreign competition comprising about 15 per cent for Dunlop, 11 per cent for Michelin, and 1 per cent for Pirelli and others. No improvement is expected in the near future.

Venezuela.—Exchange is down, collections are slow, and business is poor. Merchants are buying for immediate demands only, and new lines are added very reluctantly.

Far Eastern Markets

United States exports of pneumatic automobile casings to Far Eastern markets amounted to 282,333 valued at $3,255,124 in the first six months of 1931, compared with 327,114 valued at $3,474,247 in the same period of 1930—a decline of 14 per cent in quantity and 6 per cent in value. These trade reverses are remarkably small and all the more noteworthy in view of the serious market price depreciations in practically all far eastern commodities. The growing importance of far eastern tire markets is apparent in their strength in the face of the general world economic situation, for these countries increased their quota of total United States tire exports from 24.1 per cent in the first six months of 1930 to 27.4 per cent in the same six months of this year

The following summaries have been prepared from recent reports submitted by American consular and commercial officers stationed in far eastern countries.

Aden (Arabia).—American makes predominate. Continental entered the market recently; sales as yet are small. Sales of tires, as a result of general business depression, are not active at present, and only necessary replacements are made.

British India.—Six American makes are very active and securing most of the trade. Michelin, Dunlop, and Continental are also active. Prices and discounts are making tire business almost unprofitable.

British Malaya.—Sagging business activity is adversely affecting tire sales. Competition is bitter and sales are unprofitable. Eight American makes divide 62 per cent of the tire business—Dunlop, 18 per cent; Michelin, 10 per cent; Continental, 6 per cent; and Avon and Pirelli, 1 per cent. Tan Kah Kee is getting about 3 per cent of the trade. Dealers' stocks are about normal.

Ceylon.—Business conditions and lower market prices for Ceylon crops are retarding tire sales. American makes are participating to a greater extent in tire sales. Dealers are importing only minimum requirements; stocks are normal.

China.—Competition is extremely severe, especially from Michelin. Tan Kah Kee tires, of Singapore, have appeared on the market but have now been withdrawn. Tire stocks are normal at Shanghai; those at Tientsin are sufficient for the next few months; Manchurian stocks are high for present conditions. Annual tire consumption per car is 3½ for pneumatic tires and 1½ for solids.

Chosen.—Competition is keen from Japanese makes,

which practically dominate the market. Stocks were about 11 per cent higher at the end of June than at the end of March.

French Indo-China.—Michelin leads, followed by three American tires, and Bergougnan. American companies are shipping to Saigon from foreign branch factories and from French ports, in order to enjoy tariff preferences; thus, there were no direct tire shipments from the United States to French Indo-China during the first six months of 1931.

Hong-Kong.—No recent changes have taken place in printed tire price lists, although there have been accusations of price cutting and rebates. Tan Kah Kee, of Singapore, has gained little popularity, despite low prices. American makes are holding their share of total business.

Iraq.—Eleven makes of tires are in the market—seven American, and Michelin, Dunlop, Continental, and Englebert. Sales have been somewhat depressed, owing to the business situation. Russian-made tires have appeared, but their sales have been negligible.

Netherland East Indies.—The demand for tires is reported down about 25 per cent. Business is restricted to dealers having sound financial positions. The general situation is sound, however, and there is no cause for alarm. Dealers are reducing stock positions and attempting to reduce credits and consignments. Retreading shops of Japanese and Australian origin are being established.

Persia.—Three American makes secure the bulk of sales, with Dunlop and Michelin dividing smaller portion. Resinotrust (Russian) and Continental also are on the market. Business conditions and intricacies of the trade monopoly law are retarding tire sales.

Philippine Islands—Tire prices have been reduced to a point where it is claimed that they are lower than those in the United States. Competition is keen and local tire salesmen are doubling their sales efforts. It is claimed that Michelin discontinued in the Islands on April 30.

Syria.—Michelin is recovering its former place of importance in the market. Stocks are slightly above normal for the season of year.

Rubber Coffins?

AN ENGLISH rubber grower has addressed a letter to the London press in which he makes the remarkable suggestion that rubber should replace wood in the making of burial caskets. He says that undertakers are not opposed to the scheme and that, if generally adopted, it would probably mean the absorption of more rubber per annum than is now used in the manufacture of tires. Furthermore, rubber used for coffin construction would disappear forever. It could not be reclaimed, as in the case of tires, to compete with new crude. Paradoxial at it may seem, coffins may well be the means of giving a fresh lease of life to the well-nigh moribund plantation industry. In fact, the suggestion of this planter would, if carried out, rapidly absorb all surplus stocks and create a scarcity of rubber for its present legitimate uses.

Japanese Tire Exports

JAPANESE official trade returns show but one classification for tires, "Gum Tires," the unit of quantity being 100 kin which is equivalent to 132 pounds avoirdupois. By comparison with other official trade returns, the Rubber Division of the Department of Commerce, has found that three automobile casings are exported for every 100 kin. Using this basis of conversion Japanese tire exports during the first six months of 1931 amounted to 62,556, compared with 70,995 in the same period of 1930.

The Carbon Black Trail in the Yukon

A NOVEL use for carbon black was disclosed when J. M. Huber, Incorporated, received an order recently for shipment to Whitehorse, Yukon Territory. According to C. J. Rogers, comptroller of the White Pass & Yukon Route, this is to be spread out over the surface of a lake 29 miles long to hasten the Spring thawing of ice and thereby permit earlier operation of the company's steamers.

Lake Lebarge is really an expanded piece of river between Whitehorse and Dawson, being about two miles wide. The rivers entering and leaving the lake at each end thaw out sufficiently for steamer transportation several weeks prior to the lake, owing to faster current conditions. This thirty-mile stretch is therefore responsible for seriously delaying operation over the two hundred odd mile trip between the two points.

After considerable experimentation, it was found that a mixture of carbon black and crude oil spread thinly on the surface of the ice accellerated the action of the suns

LEFT: White Pass and Yukon Route. Steamers Passing Through the Carbon Black Trail
RIGHT: Carbon Black Trail at Lake Lebarge, Yukon Territory

rays in rotting the ice to a point where the steamers can plow through. The carbon black tends to absorb the heat rays as compared with the reflecting surface of the snow covered ice.

About the middle of April this mixture is applied in a strip 40 feet wide, for the entire length of the lake, by means of a motor tank truck with a perforated pipe at the rear. From this date on the days are steadily lengthening until about June 22, when daylight is continuous for 24 hours, with 18 hours of direct sunshine.

By the middle of May, the 40 feet "Carbon Black Trail" has become soft enough to permit the passage of the 36 feet beam vessels, with the ice on either side remaining firm enough to support a man's weight.

Carbon black is being used similarly to some extent in the St. Lawrence and other northern waterways. It is conceivable that this well-known rubber pigment may play an important part in opening up the vast northern territory to year round communication.

French Rubber Footwear Exports

ALL sorts of rubber boots and shoes and canvas rubber-soled shoes are reported in a single class in French official trade statistics, the quantity being shown in units of gross weight (kilos). During the first six months of 1931 France exported 502,500 gross kilos as compared to 832,500 gross kilos in the same period of 1930.

The largest foreign market, Algeria, took 94,500 kilos, with Switzerland running second, with 78,800 kilos. As a matter of surprise the United Kingdom was third, with a total of 71,200 kilos.

Process for Making Rubber Stamps

A PRACTICAL, rapid and simple method of producing rubber stamps has been brought about by the invention of specially designed type which resembles printers' type in every respect except that the letters instead of being raised are sunken. The manufacturers supply these letters in many styles and sizes and in order to produce rubber stamps, the letters are assembled to con-

Evatype With Sunken Letters for Making Rubber Stamps

The Evatype Vulcanizer

The Form After Removal from the Vulcanizer Showing the Molded Rubber Partly Lifted Off

form to the desired reading matter, and locked into a frame. A piece of unvulcanized rubber is placed upon them and the whole is then inserted into an inexpensive heated press or vulcanizer. The rubber, which vulcanizes in ten minutes, is then taken out, having entered the sunken letters, vulcanized and become perfectly formed rubber dies. The die is then trimmed, glued to the desired handle and the stamp is complete. It is state that experiments are also being made in the use of this method in making printing plates.

This method of making rubber stamps was tried many years ago but the results were unsatisfactory because provision had not been made for air to escape from the sunken type when rubber was laid upon them. The inventor of the present process happened upon the solution of this difficulty with the result that success was immediate and emphatic. By the new method it is not necessary to use excessive pressure.

The process is the property of the American Evatype Company of Deerfield, Ill.

Summit Hydraulic Vulcanizer

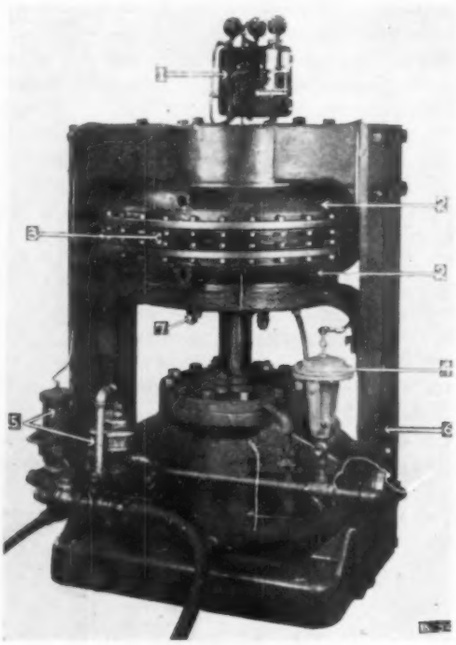
A NEW type of hydraulic automatic vulcanizer is being offered to the industry by the Summit Mold and Machinery Company, Akron, O. The accompanying photograph shows the general appearance of the machine and its outstanding features. A description of these features, as indicated by the numbers and arrows in the illustration, follow:

No. 1 is the time control which automatically controls the closing, length of time of cure and opening of the vulcanizer. After placing a green tire in position in the lower half of mold, it is only to press a small plunger at the side of the control thus closing the vulcanizer after which the timing and opening are automatic. It can also be connected to operate one or more vulcanizers.

No. 2 is the steam back and can be made in different manners to accomodate the particular type of mold desired by the users of the vulcanizers.

No. 3 in this case is the tire mold and as shown is bolted to the open steam back thereby forming a steam cavity between the two.

No. 4 is a three way diaphragm-operated air or water control valve which controls the air or water in and out



of the bag. One valve is required for the use of air, and two where water is used.

No. 5 is the hydraulic valve controlling the water for opening and closing the vulcanizer.

No. 6 shows the cam in the side column that operates and controls the tilting action of the lower platen into a loading and unloading position.

No. 7 shows the end of a rod, of which there are three, that make contact with the top of the cylinder during the last part of the downward stroke. This causes the mold proper to recede away from the bead ring thereby stripping the tire from the bottom half of the mold.

The machine as installed is also equipped with safety devices not shown in the accompanying illustration.

A rubber belt dressing, "Goodrich Plastikon," is now marketed by The B. F. Goodrich Rubber Co. It is a hard substance containing no oil or grease and is manufactured in convenient stick form for application on a moving belt.

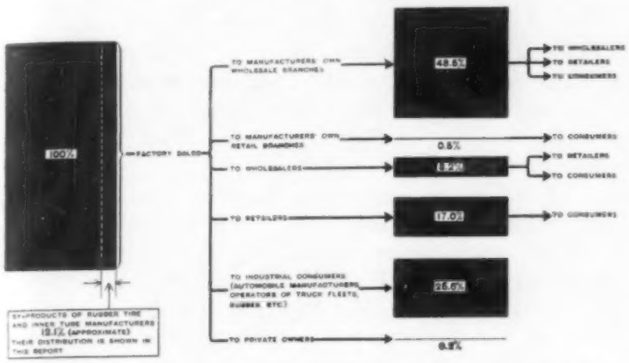
The compound contains no chemical harmful to belt or pulley. Its resinous ingredients are combined in such a way as to prevent harmful results.

The dressing gives a tacky belt surface, improving pulley contact for a long period of time, Goodrich claims. The product is not inflammable and the cost is moderate.

Distribution of Tire Sales in 1929

SALES to manufacturers' own wholesale branches make up nearly one-half the sales by manufacturing plants engaged primarily in making rubber tires and inner tubes. Data collected for the Census of Distribution show that of the total sales by these plants in 1929, amounting to $770,177,000, 48.5%, or $373,314,000, was sold in this way.

The remaining sales were made as follows: to industrial consumers, such as automobile manufacturers, operators of truck fleets, busses, etc., 25.6%, or $197,383,000; to retailers, 17%, or $131,207,000; to wholesalers, 8.2%, or



$62,939,000; to manufacturers' own retail branches, .5%, or $4,136,000; and direct to private owners, .2%, or $1,198,000.

Of the above sales to dealers and industrial consumers $15,426,000 was made through manufacturers' agents, selling agents, brokers, or commission houses. Eleven manufacturing plants sold through such agents, 5 of them selling their entire output in this way.

This survey shows the sales channels used by the 91 manufacturing plants which are engaged primarily in making pneumatic tires and inner tubes for automobiles, motorcycles, bicycles, etc.; and solid and cushion rubber tires for trucks and other vehicles. The sale of other products made by these plants, amounting to approximately $93,000,000, is also indicated in this report.

R. G. A. Dampness Test for Concrete Floors

WHEN covering concrete floors with rubber it is necessary to ensure that the concrete is perfectly dry, as the presence of moisture in the sub-floor prevents proper adhesion of the rubber tiles or sheets. The Rubber Growers' Association advises the following test as a means of ascertaining whether a concrete floor is damp:

Use a plate of glass at least 12 inches square, larger if possible. Under this place sufficient calcium chloride crystals to cover the test space of floor fairly well. Then seal the glass with putty and leave at least 60 hours. If there is any dampness or capillary action, the calcium chloride crystals will dissolve and disappear. Sometimes the water will collect on the glass and on the floor. If the slab is dry and there is no capillary action the calcium chloride crystals will remain in their original form and there will be no appearance of water either on the underside of the glass or on the floor. Unless such is the case, under no condition should rubber be placed on the concrete.

Sponge Rubber

SHRINKAGE of molded sponge may be due to one of these causes, viz: undercure, or overblowing. Overblown shrinkage may be remedied by (a) ageing a few days (b) pin pricking (c) blowing back to normal size with air pressure introduced through a large hypodermic needle (d) passing between squeeze rolls while still hot. —R. R. Olin Laboratories, Akron, Ohio.

Back Copies Wanted

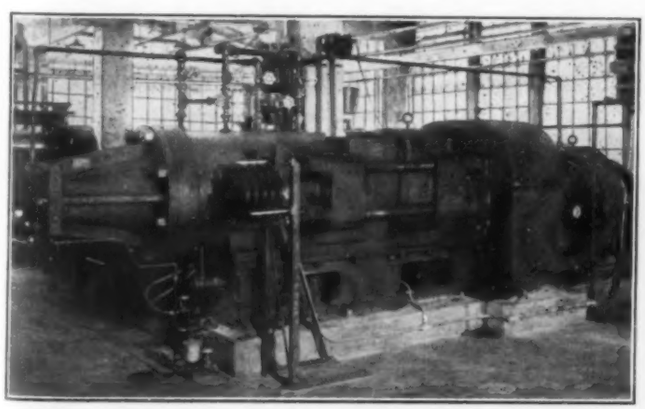
THE Library of Congress, Washington, D. C., requires the July 10, 1925; July 25, 1925 and August 10, 1925, issues of THE RUBBER AGE to complete its files. If any of our readers have any of the above copies which they are willing to present to the Library of Congress, we shall be pleased to forward them if they are addressed to us at 250 West 57th Street, New York City.

Editors, THE RUBBER AGE.

Old and New Models in Rubber Machinery

SOMEONE recently said, "Replacing industry's obsolete equipment with improved machinery and tools now available is the way to win this economic war and to rebuild prosperity." Certainly this is true of the rubber industry, where much old equipment is still in use—despite the availability of modern machinery which is more economical, more efficient and considerably safer than the old equipment. Machinery manufacturers are urged to send in old and new photographs of their equipment for possible use in this series.

The Editor, THE RUBBER AGE.



RIGHT: One of the original Adamson tubing machines

LEFT: A 16-inch tubing machine, one of the largest ever built, by the Adamson Machine Company. It has a capacity of 23,000 pounds of rubber per hour at 20 r.p.m. It occupies a space 21 feet long, exclusive of the dye head, and is 6 feet 4 inches in width

EDITORIAL COMMENT

Stabilized Employment

THE action of the board of directors of the Rubber Manufacturers' Association in unanimously adopting a resolution to the industry urging that every effort be made by all the rubber manufacturers to maintain their present labor forces, even if a reduction in hours becomes necessary, is to be heartily commended. The leaders of the industry have, in turn, replied that the resolution will have their support and everything will be done to stabilize employment. Such action cannot but have a helpful effect, not only upon the workers of the industry but also upon the confidence of the communities where the industry operates.

We can find plenty of merit in the many planned efforts to alleviate depression, but in the last analysis there is nothing like the assurance of steady employment, even though the hours of work may be shortened and the pay envelope slightly thinned.

In fact, a shorter working day may prove a boon to workers and the industry alike. The six-hour day was adopted by the Kellogg Company, of Battle Creek, Michigan, as an emergency measure, over six months ago, but because of unexpected advantages it has been retained indefinitely and according to Lewis J. Brown, president of the company, the worker has greater assurance of steady employment, more opportunities for advancement and the company profits through increased production, decreased overhead and greater return on capital investment. Mr. Brown describes the workings of the plan as follows:

"Under our old plan of working three eight-hour shifts, our employes on each shift were given a half-hour meal period, and also were paid time and a half for all time over eight hours, as well as for all work on Sundays. Employes working on the three to eleven P. M. shifts were paid 5 per cent more than the employes working on the seven to three P. M. shifts, while the employes working on the eleven P.M. to seven A. M. shifts were paid 5 per cent over the previous shifts, or 10 per cent over the seven A. M. to three P. M. shifts. There was a tendency in the eight-hour day to slow down before meal-time; and the pick-up after meal-time was always slow.

"We took all this into consideration, along with the current unemployment situation. On December 1, 1930, we introduced the six-hour day into our plant, creating four six-hour shifts instead of three eight-hour shifts. These four shifts are organized as follows:

Shift 1—6 A.M. to 12 noon;
Shift 2—12 noon to 6 P.M.;
Shift 3—6 P.M. to 12 midnight;
Shift 4—12 midnight to 6 A.M.

"Under such a schedule there are no inequalities. Each shift has equal advantages. This eliminated the need for extra allowances for any shift, and also eliminated the stop for meals, as each shift works straight through without a break.

"In a business such as ours, where the jobs outside of mechanical and maintenance are mostly repetitious, the work tends to become monotonous. Toward the end of an eight-hour shift, the employes grew somewhat careless and waste increased. We had to adjust the speed of our processes and machines to this human factor. In a shorter working day fatigue becomes less important as a factor in production.

"The workers are much more alert and efficient, knowing that the working time is short, and that it 'won't be long now' until the whistle will blow. Because of this we were able to make a slight increase in the rate of our production lines that multiplies itself into a substantial increase in total production and gives us a greater return on our investment and machinery.

"In reducing the number of working hours a day, under the six-hour-day plan, there was naturally a reduction in the day wages for the higher-paid employes. This was accompanied, however, by an increase in hourly base rates.

"In determining the increase in hourly wages, it was necessary that this figure be so established as to be sufficient for the employees to continue to live at the same scale as on the eight-hour shift.

"The plan has now been in operation for nearly six months. While no executive is safe in stating that any given policy will be followed out in perpetuity, I have no hesitancy in stating that unless some at present unlooked-for development occurs, or some unsuspected weakness develops in the plan, we shall continue to operate on the six-hour day permanently."

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Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

STANDARD TIRE & RUBBER PLANS LOUISIANA PLANT

The Standard Tire & Rubber Company has been granted a charter for the operation of a factory at Hammond, La., according to an announcement by officials of the firm. It is expected that the new plant will eventually give employment to 500 people.

T. C. Gould is president of the company and George E. Knowles, of Trenton, N. J., a rubber manufacturer of many years' experience, will be factory manager. Mr. Knowles arrived at Hammond on September 13 to complete plans for the opening of the plant.

CENSUS OF DISTRIBUTION SHOWS 52,057 TIRE SHOPS

The Census of Retail Distribution made by the Department of Commerce for 1929 shows 52,057 direct automobile tire outlets for that year. Of this total, 33,443 were listed as filling stations with tires and accessories, 11,643 as accessory, tire and battery stores and 6,971 as strictly tire and tire repair shops. The total amount of sales reported by these outlets for all items carried was $1,204,120,972. This number of retail outlets does not take into consideration garages, department stores or many other places where tires are sold.

The census also lists for 1929 a total of 138 exclusively rubber goods stores, doing an annual business of $5,938,612. The number of rubber stamp businesses listed totaled 108 with net sales for the year of $3,450,700. Second-hand stores selling tires, batteries, accessories and parts amounted to 2,511 and their sales to $22,610,881.

GOODYEAR SETS RECORD FOR SAFETY IN AUGUST

The greatest safety record in the history of the Goodyear Tire & Rubber Company was compiled during the month of August. Not a single lost-time accident was reported in any of the 13 subsidiary plants, while only 27 were recorded in the Akron factories. The Akron mark was the lowest since early records were inaugurated, and most of the accidents were slight.

The record performance in the Akron plant is held by Department 239, which has completed 1,015 work days without an accident. Improvement in the safety record is attributed to the work of the safety committees and suggestions presented as a result of inspection trips, according to company officials.

Fire at Bowling Green Rubber

A small fire of undetermined origin damaged a pile of rubber at the factory of the Bowling Green Rubber Company, Toledo, O., on September 5. The damage was estimated at less than $100.

Panco Rubber to Expand

The Panco Rubber Company, manufacturer of rubber heels and soles at Chelsea, Mass., is having plans prepared for the erection of a two-story storage building at Highland Street and Congress Avenue in that city. The structure will be 75 by 85 feet in size and will cost approximately $40,000.

Inspect Jeannette Plants

A large group of engineers made an inspection trip to the plants of the Pennsylvania Rubber Company and the Paramount Rubber Company, both of Jeannette, Pa., on September 15. Those in the visiting group were members of the Pittsburgh Section, American Institute of Electrical Engineers, and the Electrical Section of the Engineers' Society of Western Pennsylvania.

H. S. Firestone, Jr., on Radio

The Firestone Tire & Rubber Company this month resumed its weekly radio broadcast programs, using a National Broadcasting Company network every Monday night at 8:30, Eastern Daylight Saving Time. This season Harvey S. Firestone, Jr., vice-president of the company, is giving a short talk of popular appeal as a part of each program. Alois Havrilla is announcer for the broadcast, and the entertainment program includes the Firestone Orchestra, directed by William Daly, and such noted singers as James Melton and Gladys Rice.

NATIONAL-ERIE FACTORY TO RESUME OPERATIONS

The National-Erie Corporation, Erie, Pa., manufacturer of rubber factory machinery, steel of all kinds and various types of gear, has effected a reorganization which is expected to result in the reopening of its large factory, one of the biggest in western Pennsylvania. The plant was closed down on August 19.

William J. Johnson, of Pittsburgh, Pa., has been elected president of the firm, succeeding A. Hunter Willis. B. L. Weaver, of New York City, continues as vice-president and treasurer and Henry E. Scott, of Erie, as secretary and assistant treasurer.

LAWSON RUBBER COMPANY TO OPEN AT NEW ORLEANS

The Lawson Rubber & Manufacturing Company, established for years at Dallas, Tex., has completed negotiations for the opening in New Orleans, La., of a new factory for the production of automobile tire patches, boots and accessories. E. H. Abbott, vice-president of the company, announced that a lease has been obtained on a building with 15,000 square feet of floor space at 2003 St. Louis Street in that city.

Machinery for the factory is now being shipped to New Orleans from Dallas. The new plant will be directed by J. F. Cooke and J. R. Lawson, Jr., and between 40 and 50 persons will be employed. Operations are expected to begin at an early date.

UNITED STATES RUBBER COMBINES DEPARTMENTS

Consolidation of the advertising department and the commercial research department of the United States Rubber Company into one department has been announced by F. B. Davis, Jr., president. The combined unit will be known as the advertising and commercial research department.

Walter Emery, who has been director of the commercial research department since 1922, has been appointed director of the consolidated department. William F. Earls, director of advertising for the past five years, has severed his connection with the company, but has not as yet announced his plans for the future.

Goodrich Men Get Service Pins

Ten B. F. Goodrich Company employes will receive 20-year service pins in September, it was announced recently. They are: Carl Bouschere, C. L. Harper and Allan B. Merrill, mechanical goods division; Earl E. Carson, processing; Robert H. Dyer and Karl Schmidt, accounting; Ralph Kaltwasser, tube department; Charles Ruehling, machine shop; Richard Twynham, office service, and E. Royer, Societe Francaise B. F. Goodrich, Colombes, France.

Rubber Aids Rocking Chair Fad

Hollywood newspaper reports state that the use of rocking chairs by film stars between the taking of scenes has become suddenly popular. The chairs are mounted on rubber-covered rockers to deaden the sound and prevent any interference with the recording of sound for the films.

RESEARCH GROUP TO SEE GOODYEAR LABORATORIES

Goodyear Tire & Rubber Company officials are planning a program for the visit at Akron, O., on October 10 of one hundred leading business men and bankers on a tour of laboratories conducted under the auspices of the National Research Council, which will comprise visits to thirteen outstanding research organizations in various sections of the East and Middle West.

Several meetings have been held to discuss the visit and a tentative schedule has been announced, a feature of which is an inspection of the Zeppelin factory and dock.

It is planned to visit the Zeppelin factory and dock shortly after the arrival of the party in the morning to be followed by visits to the mechancal goods, chemical and tire laboratories. According to the tentative arrangements, Goodyear Hall will be visited just before or after luncheon.

In the afternoon the guests will assemble at the Goodyear theatre where talks will be given by the company's experts on the following subjects: development of accelerators, dirigible cell coatings, physical development of tires, and airwheels, the company's latest achievement. The afternoon session will probably conclude with a showing of the company's sales film, "Every Third Wheel."

A supper will be given to the touring party either at the Mayflower or the Country Club. It is planned to have one of the company officials speak. It has been suggested that Dr. Karl Arnstein, vice-president of Goodyear-Zeppelin, and designer of the ZRS-4-5 type of super-Zeppelins, may talk to the gathering on the subject of dirigibles.

HARVEY FIRESTONE SEES IMPROVEMENT DURING 1932

Harvey S. Firestone, president of the Firestone Tire & Rubber Company, declared in a newspaper interview at Copenhagen on September 5 that he believed the coming winter would be the worst ever experienced, but that he expected an improvement to set in early next year. He declared that the prevailing world economic crisis had taught the United States, at a heavy cost, that neither an individual nor a nation could stand alone, but that both community and international co-operation were essential to the continuance of the economic system. Mr. Firestone visited Premier Stauning in the course of his stay at the Danish capital.

Upon arriving at Berlin the following day, Mr. Firestone further elaborated on his opinion that isolation is impossible for the United States. "For the present President Hoover, to whom I shall report after my return to the United States, did what he could for Europe by introducing a one year's holiday for war debt payments," he said. "He can not and will not do more in the near future. Further steps can not be taken before American public opinion is sufficiently prepared; but I am certain that the first year holiday will be followed by others. Later, when the soil has been prepared, the whole problem of debts and reparations will be attacked. But time is needed to do this."

Mr. Firestone urged the further construction of good highways and roads in Germany.

"Extruso" Wins Raybestos Prize

The prize of $500 offered by Raybestos-Manhattan, Inc., for a trade name for its molded brake lining was won by A. L. Wilson, of Nashville, Tenn., with the name "Extruso." A prize of $250 went to C. H. Maling, Bangor, Me., a prize of $150 to Joseph Leveen, Boulder, Col., a prize of $100 to Albert B. Miller, Mansfield, O., and 100 prizes of $5 each to other contestants. The company's molded brake lining is made by the Manhattan Rubber Manufacturing Division, Passaic, N. J.

RUBBER BEING EMPLOYED IN TREE TRANSPLANTING

Successful experiments in the use of rubber as a preservative of trees, shrubs and flowers during transplanting are being conducted by the B. F. Goodrich Company.

Plants to be shipped or transplanted are dipped into a rubber solution so that all but the roots are coated to prevent the dissipation of moisture and to retain the shape and color pigments of the original foliage.

Trees are sprayed with the solution. Thickness varies from one- to two-thousandths of an inch, according to the length of time the earth or plant is to remain out of the earth.

Some trees have been kept under the rubber coat as long as nine months without serious harm from loss of moisture, while smaller and more fragile plants have been kept correspondingly lengths of time.

After the rubber coat has served its purpose and the plants are replanted the expansion of the plant when it resumes growth and the action of nature's elements cause the rubber to crack, curl and fall off, leaving the vegetation to resume its growth where it stopped when the nutrition was removed.

AKRON RUBBER PAVEMENT IN USE FOR EIGHT YEARS

At one of the heavily traveled trucking entrances to the Goodyear Tire & Rubber Company factories in Akron, O., a section of rubber block paving has been in service since 1923. The stretch on East Market Street is not only a heavily traveled city and state artery, but is at the shipping entrance where trucks haul heavily laden trailer trains of tires and materials.

Recent inspection showed that the blocks gave evidence of scarcely any wear and that they had stayed in place through the years of battering by millions of tires passing over them. These blocks, made by Goodyear, the size of an ordinary paving brick, are laid in asphalt and have interlocking joints.

F. R. HILLGREN, Chicago specialty salesman, is now representing the Miller Rubber Company, Akron, O., as a special representative to the premium trade, it was recently announced by JAMES TAYLOR, sales manager of the Miller rubber toy division. Hillgren is selling inflatable rubber toys, balls and other rubber novelties to manufcaturers and wholesalers. He is well known throughout the grocery, baking, coffee and associated food trades, having been identified with similar lines for several years.

A. L. VILES IS NAMED TO UNEMPLOYMENT GROUP

A. L. Viles, general manager of the Rubber Manufacturers Association, has been appointed a divisional chairman of the Commerce and Industry Division of the Emergency Unemployment Committee, it has been announced by Harvey D. Gibson, chairman of the committee. Mr. Viles will head the activities of the rubber trade in the division.

The Emergency Unemployment Relief Committee has been organized by business leaders to provide unemployment relief in New York this winter. Plans for co-ordinating the task of raising and distributing funds in all five boroughs of the city have been announced. Mr. Viles will form a committee to conduct solicitation among individuals and corporations in the rubber industries.

Mr. Viles was a chairman in the Commerce and Industry Division of the Emergency Employment Committee, which raised over $8,000,000 last year to place unemployed men and women at emergency jobs.

RUBBER STOCKS DECLINE WITH REST OF MARKET

The continuing slump in world markets that culminated with the shift of the British government away from the gold standard has had its effect upon the stock issues of the leading rubber manufacturing companies. Several of the leaders of the industry fell to new low levels during the fortnight, including United States Rubber common and preferred, Goodrich common and preferred, General common and preferred, Fisk common, Raybestos-Manhattan and Intercontinental.

Bonds of the industry were also affected, some funded debt issues of prominent companies dropping to their lowest levels. Goodyear and United States Rubber issues were especially weak in the bond market at New York, while Goodrich debentures also fell off in the course of the fortnight.

Closing prices of the stock issues of the principal companies in the industry on September 19, compared with the close on September 4 and with the high and low thus far reached in 1931, are shown in the following table:

	Last Price		1931	
	Sept. 19	Sept. 4	High	Low
Aetna	—	—	5	2
Ajax	—	—	½	¼
American Hard Rubber	—	—	35¼	30
Dayton "A"	—	—	—	—
Faultless	—	—	37	31⅜
Firestone	16½	—	21½	13
do. 6% pfd.	57⅞	62½	66¼	56¼
Fisk	¼	⅜	⅞	¼
do. 1st pfd.	—	—	3	1
General	65	67	140	65
do. pfd.	75	—	87½	75
Goodrich	8	11¼	20⅞	8
do. pfd.	—	42	68	33¼
Goodyear	32¼	39	52¾	30⅝
do 1st pfd.	73	—	91	71
India	—	—	13½	8⅜
Intercontinental	⅞	1⅝	4½	⅞
Kelly-Springfield	1½	1¾	3½	1⅜
do. 6% pfd.	—	—	45	35
Lee	2⅜	—	4¾	2¼
Mohawk	—	—	8	2¾
do. pfd.	—	—	35	25
Norwalk	—	—	1½	½
Pirelli	29	—	39¾	28¼
Raybestos-Manhattan	14	16¼	29½	14
Seiberling	—	5¾	10¾	4⅝
do. pfd.	—	—	50	32
U. S. Rubber	8¼	12⅜	20⅝	8
do. pfd.	16½	21¼	36⅛	16¼

COLORED RUBBER PERMITS IDENTIFICATION OF WIRE

A method of identifying its various grades of code wire by means of colored rubber insulation has been adopted by the General Electric Company. Thus architects, contractors and building owners may have the assurance that installations are up to specifications without the need for complicated and expensive laboratory tests.

By means of this marking, the grades of wire in an installation may be identified at any time for years after the wiring system is in use. This feature is added with no increase in price.

The three grades will be marked with colored rubber insulation as follows: Code—black; Intermediate—red; 30%—green. Another feature of importance is tighter and closer braids with an improved weatherproof finish.

George B. Campion

George B. Campion, eastern division sales manager of the B. F. Goodrich Company, died September 12 at New York City following an operation. He was active in the rubber industry for nearly 20 years.

Mr. Campion was employed in 1912 by the New York branch of the Diamond Rubber Company, where he was later in charge of mechanical goods sales. In 1915 he joined Goodrich as special representative for mechanical goods and in 1916 was Goodrich representative for the same department in South America. He returned to Akron in 1917 as Goodrich representative to the mining industry, and the following year was made company agent in Washington on government specifications and government contracts.

His appointment as manager of government sales followed in 1919, and in 1920 and 1921 he acted as district manager in Dallas, Tex. He returned to New York in 1922 as district manager, later being appointed manager of the Goodrich mechanical goods department with headquarters in Akron, and subsequently serving as special company representative to the petroleum industry. In January, 1931, he was made eastern division sales manager, the position he occupied at the time of his death.

He was unmarried and is survived by his parents and a brother and sister, all of New York City.

J. Walter Spalding

J. Walter Spalding, chairman of the board of directors and a founder of A. G. Spalding & Brothers, makers of rubber and other sporting goods, died September 11 at Monmouth Beach, N. J. He and his brother formed in 1876 the firm which later was to introduce the manufacture of golf balls, tennis balls and other athletic equipment to the United States and to attain a leading position in that field.

Dr. Harry Phillips Davis

Dr. Harry Phillips Davis, vice-president and director of the Westinghouse Electric & Manufacturing Company, died at his home in Pittsburgh, Pa., on September 10.

Names in the News

W. C. YOUNG, manager of the aeronautics department of the Goodyear Tire & Rubber Company, spoke before members of the Kiwanis Club of Alliance, O., last month. The building of the U. S. S. Akron was the subject of his talk.

F. M. SHADLEY has been appointed as comptroller of the Master Tire & Rubber Corporation. He has previously been active in the Akron offices of Ernst & Ernst, public accountants, during his 10 years of association with that firm.

RUSSELL COLLEY, development engineer of the B. F. Goodrich Company, spoke before the Mercator Club of Akron, O., September 8 at the Mayflower Hotel in that city. He described the development of ice removing wing shoes for airplanes and illustrated his talk with motion pictures.

C. HAROLD SMITH'S WILL LISTS FELLOW WORKERS

The will of C. Harold Smith, founder and president of the Binney & Smith Company and vice-president of the Columbian Carbon Company, who died August 31 in London, makes members of his family chief beneficiaries but also includes his co-workers in the carbon black selling organization.

Mr. Smith left $1,000 to "each of the male persons in the regular employ of the Binney & Smith Company in its offices at New York, Philadelphia and London continuously for at least five years prior to my decease." Thirty-one employes are said to qualify under this clause. Sixteen women employes get $200 each under the same conditions.

In addition, ten shares of Binney & Smith stock are left to each of the following employes of the concern:

George D. Bowden, George D. Buck, Edward J. Bremble, Frederick R. Cantzlaar, Donald F. Cranor, Herbert K. De Milt, Marie C. Falco, Effingham S. Finch, Allan F. Kitchel, William Kelly, John T. Kealy, Clarence V. Kendall, Henry C. Klein, Jarvis S. McCrea, James E. Roan, Norman L. Smith, Darius F. Wood, William B. Wiegand, all of the New York office; Cortland P. Morris, of the Philadelphia office, and Charles W. Harbridge and H. A. Tobias, of the London office.

Two years ago Mr. Smith offered to spend $10,000,000 for the greatest benefit to humanity, but his will contained no charitable bequests of any character. This is ascribed partly to the belief that no plan suggested for the disposition of the money exactly suited him and partly to the fact that the deflation in stocks since 1929 cut his estate down to not more than $4,000,000, or less than one-fourth of its former amount.

Mr. Smith's body was brought back to the United States for burial.

J. T. KIDNEY, safety director of the Goodyear Tire & Rubber Company, spoke before members of the Rotary Club of Kent, O., on September 1. He spoke on labor conditions at Goodyear and described the employe organizations, hospital and recreational facilities.

RALPH L. DICKEY has been appointed as general sales manager of the general products department of the United States Rubber Company, with headquarters at Providence, R. I. Mr. Dickey was graduated with honors in the mechanical engineering course at Yale in 1914. He has had a wide and

R. L. DICKEY

varied experience in manufacturing and selling. For the past three years he has been assistant to the general manager of the general products department, specializing on sales promotion work.

HARVEY S. FIRESTONE, president of the Firestone Tire & Rubber Company, sailed for the United States September 14 after visiting Berlin, Geneva, Paris and Copenhagen. He is accompanied by Mrs. Firestone, their daughter, Elizabeth, and their sons, Leonard, Raymond and Roger.

E. W. MACHAN, personnel manager of the Goodyear Tire & Rubber Company plant at Sydney, Australia, returned to the Akron offices of the company on September 9 to confer with Goodyear executives. He will remain at Akron until September 26, and before sailing on October 16, expects to spend some time at the Gadsden, Ala., and Los Angeles, Cal., plants of the company.

W. C. WRIGHT, assistant to the general superintendent of the Goodyear Tire & Rubber Company, headed a party of 32 Goodyear production executives who visited the factories of the National Cash Register Company and the Frigidaire Corporation at Dayton, O., on September 9.

GEORGE H. SEYBOLD, head manager of HAPM, the main plantation estate of the United States Rubber Plantations in Sumatra, has returned to the United States for a short vacation.

Current Crude Rubber Items

IMPROVED PRACTICE IS NOTED ON PLANTATIONS

The annual report for 1930 of the Department of Agriculture of the Straits Settlements and Federated Malay States shows a continuance of improvements in rubber estate factory practice.

Investigations in relation to estate factory practice have demonstrated the possibility of increasing the output of sheet rubber by the use of wide roll light machines and deep coagulating tanks.

On several estates an output equivalent to 1,200-1,300 pounds of dry rubber per hour has been obtained with a light battery of three smooth roll and one marking machine compared with an average output of 400-500 pounds per hour obtained in the best factories.

The handling of the coagulum from the coagulating tanks without preliminary hand rolling has been effected by means of suitable aluminium chutes.

An investigation of latex has resulted in the isolation of a lipin body which appears not only to be of importance in relation to rate of vulcanization but to be closely related to the important variability in plasticity of plantation rubber.

Investigations on the presence of fine sand in latex and sheet rubber have demonstrated the importance of preliminary settling of latex and careful straining in "box" or similar strainers with vertical sieves.

FOREIGN RUBBER STOCKS DROPPED DURING AUGUST

Dealers' stocks of crude rubber in the Far East amounted to 42,393 tons on a dry weight basis at the close of August, a cable to the Rubber Exchange of New York, Inc., reported. This compares with holdings of 42,649 tons at the close of July, and with stocks of 41,313 tons at the end of August, 1930.

Harbor Board stocks at Singapore and Penang underwent a good sized shrinkage at the same time. These holdings amounted to 5,617 tons at the close of August, compared with 7,372 tons at the end of July, and 5,877 long tons at the close of August last year.

Reduced production of rubber on estates in the Far East is believed to have played a part in the stock reductions. July production is variously estimated to have undergone a decrease of from 13 per cent to 16 per cent by London authorities.

MALAYAN RUBBER EXPORTS TO JAPAN SHOW INCREASE

Detailed figures covering Malaya's rubber shipments during August disclose that exports to the United States were about the same as in July, the total being 27,634 tons last month, compared with 27,645 tons in July, and 27,051 tons during August, 1930.

Japan continues to take much larger quantities of the commodity than she did last year, the figures being 3,541 tons for August, 3,424 tons for July, and 2,734 tons for August last year.

The Malayan exports to the United Kingdom last month amounted to 5,825 tons, against 5,699 tons in July, and 11,930 tons in August, 1930.

Gross Malayan shipments for the month were 42,832 tons, against 43,658 tons in July, and 47,802 tons in August last year.

Exchange Differentials

The adjustment committee of the Rubber Exchange of New York on September 15 fixed the price differentials between the various grades of Hevea plantation rubber which shall prevail on all deliveries against old "A" contracts for the month of October as follows: off quality first latex crepe at one-tenth of a cent a pound; good F. A. Q. ribbed smoked sheets at two-tenths of a cent a pound; ordinary F. A. Q. ribbed smoked sheets at .35 of a cent a pound.

Odell Sees Rubber Revival; Forecasts Increase in Uses

PREDICTING the development of many new fields for the use of rubber, Lawrence G. Odell, of Munds & Winslow, asserted his belief in an early revival in the plantation and manufacturing industries in a statement made on September 15. He pointed out that crude rubber has declined 80 per cent since February, 1929, in a "bear" market that has prevailed practically for the past 27 months and urged the purchase of rubber as an investment opportunity

Mr. Odell based his conclusion on "several chief constructive features" which now call for its accumulation rather than its sale, namely the greatest percentage deflation shown by any commodity, indications of continued falling production, a better outlook for consumption and the relationship now existing between market prices and production costs.

"Fundamental influences alone point to a substantial increase in the consumption of rubber. The first indication of recovery from pronounced depression is found in the increased demand for the prime essentials of life.

"Already we see this emergence from extreme stagnation exemplified in the activity of the woolen industries, the boot and shoe industry and other divisions supplying absolute necessities. People buy because they have worn out boots, shoes, clothing and the like and supplies must be replenished. This is the first manifestation of revival after a period of depression.

Must Expand Plant Equipment

"Later on we will witness demand for additional plant equipment to turn out more consumptive goods, but this development has not yet appeared. When one considers the fact that the United States has in operation more than 26,000,000 motor vehicles and that tires are imperatively essential for their operation we must place the tire industry in the forefront of those manufacturing the necessities of modern life.

"We therefore expect the same revival in the tire industry that we have witnessed in leather goods and textiles.

"Moreover, we have sufficient faith in the intelligence, ingenuity and research capabilities of modern industry to believe that rubber will find its way into innumerable channels of consumption that were not possible when prices were at $1 per pound, or even at 25c per pound. This is a development that has characterized the history of every processed commodity and which is most graphically illustrated in the case of cotton. The low prices of the late '90s laid the basis for the enormous increase in cotton consumption in after years."

Returning to the production of rubber, Mr. Odell stated that the maximum output for all time amounted to 865,000 tons in 1929, and because the plantations were "geared up to a high rate" it was some time before producers were able to adjust themselves to lessened demand from manufacturers.

Output Cut in 1930 and 1931

"Consequently, in 1930 output dropped to only 820,000 tons. In common with other lines of industry, consumption has remained in a subnormal state longer than at first anticipated, so that the growers have been obliged to curtail further in 1931, with the result that production is not expected to exceed 780,000 tons. The present price, however, is forcing additional curtailment, and while no one is able to predict how far this program will be carried, it is safe to calculate on a further lowering of output of substantial proportions."

As against the present market price of 5c for rubber, Mr. Odell figures an economic selling price to the producer to be 13c per pound, of which 5.50c is cash outlay and 8c "all-in" costs, with an additional 5c representing interest on capital. He also points out that rubber is a free market, devoid of price control schemes.

Heavy repatriation of labor from the Far Eastern rubber estates has accompanied curtailment, and Mr. Odell forecasts that "when the turn comes the question of labor on rubber plantations is likely to prove a serious obstacle to increased output.

"The present price situation cannot continue indefinitely without bringing ruination to the whole planting industry."

RUBBER FLOORING RUSHED TO LINER BY AIRPLANE

To assure the new steamer President Coolidge sailing on time, officials of the Dollar Steamship Company had to appeal to the Goodyear Tire & Rubber Company to rush by plane the last shipment of rubber flooring intended for its cabins. The entire liner, the largest ever built in American yards and the biggest electrically propelled vessel afloat, is fitted with Goodyear rubber flooring material.

H. R. Stubbs, of the Goodyear production department, boarded a Pennsylvania Airlines plane on the afternoon of September 5 with a huge bundle of specal flooring weighing about 200 pounds and supervised the laying of it at Newport News. The liner sailed on time three days later.

RENAME J. L. JULIAN FOR EXCHANGE PRESIDENCY

John L. Julian, of Fenner & Beane, was again chosen as candidate for president of the Rubber Exchange of New York, Inc., in the list of nominations announced September 19 by the nominating committee of the exchange. The annual election will be held on Tuesday, October 20, at which time the membership will vote for officers to serve for one year. The complete list of nominations follows:

For president, John L. Julian, of Fenner & Beane; vice-president, William A. Overton, with Geo. H. McFadden & Bro.; treasurer, J. Chester Cuppia, of E. A. Pierce & Company. The retiring board of governors is renominated, excepting three members in whose place the following were nominated: Frank D. Pressinger, rubber broker; Marcus Rothschild, of M. Rothschild & Company, Inc.; and Robert L. Baird, connected with the firm of Henry Hentz & Company.

Other members of the board of governors who have been renominated are Harry A. Astlett, Harold L. Bache, William E. Bruyn, James T. Bryan, Fred Pusinelli, Clinton T. Revere, Charles Slaughter, Edward J. Wade and Charles T. Wilson.

LeRoy Wood, Nelson S. Robinson and Benjamin B. Millenthal were named as inspectors of election.

Jerome Lewine, of H. Hentz & Company, acted as chairman of the nominating committee, which included Arthur L. Dunn, of F. B. Peterson & Company; L. Henry Hirsch, of Adolph Hirsch & Company; Henry Perlish, of C. T. Wilson & Company; and Marcus Rothschild, of M. Rothschild & Company.

Premier Rubber to Expand

Tentative plans for the construction of a one-story factory building by the Premier Rubber Company, Dayton, O., were announced September 16 when bids were received by Geyer & Neuffer, architects. The new structure will be erected at Edmund Street and the Baltimore & Ohio Railroad in Dayton. Products of the Premier include soft rubber tires for toy autos, carpet sweepers, etc., door bumpers, crutch tips and hard rubber items.

UNEMPLOYED? Looking for a job? See Page 568.

New Rubber Goods

Art-Inlay Rubber Floor Mats

Art-inlaid rubber floor mats containing center designs of almost unlimited character and color are being manufactured by the B. F. Goodrich Company mechanical goods division in Akron. The mats are similar to ordinary Goodrich perforated floor mats in general characteristics. The center designs are reproductions in colors of trademarks, art work, or other desired combinations.

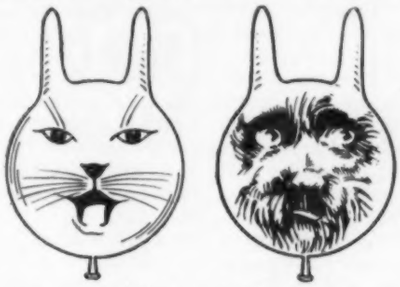
Two large coverings of this nature are now in the lobby of the Mayflower Hotel in Akron. The center reproduction of each is of the ship "Mayflower" at full sail and in characteristic colors.

Another creation is in the entrance of the World-Telegram in New York. The central figure is the Scripps-Howard lighthouse, also in colors.

Colors in each design are artistically blended and even exceptionally fine lines are sharply reproduced, giving the art-inlay the appearance of fine tapestry.

"Kat" and "Scotty" Balloons

Two new balloons which, according to their manufacturer, have found immediate popularity are the "Kat" and "Scotty," recently introduced by the Oak Rubber Company, Ravenna, O. As revealed by their names, one is a cat balloon and the other a dog, and they have ears which inflate and



stand up straight to a height of over two inches when the balloons are inflated. The main body of the balloon inflates to eleven inches in diameter, and the face is printed on both sides. A full color assortment is offered, and the manufacturer promises to add other items to this series at frequent intervals.

India Black Tube for Truck Tires

FOLLOWING two years of development work, the India Tire & Rubber Company, Akron, O., has introduced this year its black truck tube, which is understood to include a large amount of soft carbon in its heat-resisting compound. In addition to resistance to heat, the manufacturer claims for this tube superiority in resistance to tearing from jabs or punctures, resistance to chafing from flap or rim or from running flat, and air retention or inflatability.

Laboratory tests showed that after long heating at destructive temperatures the India black truck tube suffers less than 15 per cent loss in orgiinal strength, while an ordinary truck tube similarly treated loses more than 60 per cent. In the unique and picturesque air retention test illustrated, a 32 x 6 black tube with a normal air content of 1,258 cubic inches was overinflated nearly 9,000 per cent until it contained 110,780 cubic inches of air and stood much higher than the head of the tallest men.

O'NEIL SEES INCREASE IN PRICES FOR RUBBER

William F. O'Neil, president of the General Tire & Rubber Company, expressed his belief that rock bottom has been reached in crude rubber prices and that increased prices cannot be long deferred, in a recent statement.

"In days when crude rubber was produced at a profit," he says, "the taxes which normally amount to about $80,000,000 a year, were absorbed by the producer who took them out of the profits.

"For the past two years it has been impossible to take these taxes out of profits as there have been no profits for crude rubber, as is well known, is selling well below the cost of production.

"This $160,000,000 in taxes has to be paid—if not from profits, then from the price that must be paid by the rubber buyer. That means that, if the taxes are to be met by the consumer, as they always are met eventually, they must come out of an increased cost of crude to the users of rubber, unless the producer is to receive even less for his product than he is receiving now.

"As a matter of fact, Holland, which depends for about half of its income on its East Indian possessions from crude rubber is now planning an export tax to take the place of the profits tax which has ceased to yield income. This tax must be added to the present cost of rubber.

"For similar reasons, it is inevitable that an eventual upturn in the prices of other commodities to the consumer cannot be long deferred. The Federal government, of course, depends largely for its maintenance upon receipts from Federal taxes.

"This year there has been a tremendous slump in income taxes due to the decreased incomes of so many taxpayers. Even though the government pares its overhead as much as possible, much of the income formerly obtained from income taxes must be obtained in some other way."

Seiberling Tire Sales Up

An increase of 46.95 per cent in sales of tires to dealers in the first seven months of this year over the corresponding period of 1930 was reported recently by F. A. Seiberling, president of the Seiberling Rubber Company. The company's plant at Akron is now working three eight hour shifts a day, Mr. Seiberling said.

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LATE MARKET PRICES

RUBBER—COTTONS AND FABRICS—CHEMICALS

NEW YORK, SEPTEMBER 19, 1931

Crude Rubber

FOLLOWING a brief rally in which prices rose steadily to September 11, the crude rubber market again dropped off and just as steadily declined until the end of the fortnight. Late estimates figure that the amount of rubber shipments from Malaya for the month of September will total approximately 43,000 long tons, the first half of the month having totaled 21,000 long tons.

Prices quoted on the New York outside market at the close September 19 follow:

Plantations—			
Ribbed Smoked Sheets—			
Spot-Sept.	.05	@	.05⅛
October	.05	@	.05⅛
Oct.-Dec.	.05	@	.05¼
First Latex, crepe spot	—	@	.05⅜
Amber Crepe, No. 2	.04⅞	@	.05
Amber Crepe, No. 3	—	@	.04⅞
Amber Crepe, No. 4	.04¾	@	.04⅞
Brown Crepe, Clean thin	—	@	.04¾
Brown Crepe, rolled	—	@	.04½
Liquid Latex, per gal.	.70	@	.80
Paras—			
Up-river, fine	.06½	@	.06⅝
Up-river, coarse	Nominal		
Acre Bolivian, fine	.06¾	@	.07
Caucho Ball, Upper	Nominal		
Centrals—			
Central scrap	.06	@	—
Esmeraldas	.06	@	—
Balata—			
Block, Ciudad	—	@	.30

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
Spot-Sept.	2 1/4	@	2 5/8 d
October	2 1/4	@	2 5/8 d
Oct.-Dec.	2 3/8	@	2 1/2 d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot	2 1/4	@	2 1/4 d

Daily closing prices and sales on the Rubber Exchange of New York follow:

Reclaimed Rubber

So long as crude rubber prices continue depressed, there appears to be little hope for any improvement in the market for reclaim. The consumption, however, still holds its own in proportion to the amount of crude rubber used. Late prices follow:

High Tensile			
Super-Reclaim Black	lb. .06	@	.06¼
High Tensile Red	lb. .06¼	@	.06½
Shoe			
Unwashed	lb. .05¼	@	.05½
Washed	lb. .06½	@	.06¾
Tube			
No. 1 (Floating)	lb. .07½	@	.08
No. 2 (Compounded)	lb. .06	@	.06½
Tires			
Black	lb. .04¾	@	.05¼
Black, selected tires	lb. .05	@	.05¼
Dark Gray	lb. .06	@	.06¼
Light Gray	lb. .06¼	@	.06½
White	lb. .07½	@	.07⅝
Truck, Heavy Gravity	lb. .06	@	.06¼
Truck, Light Gravity	lb. .06¼	@	.06½
Miscellaneous			
Mechanical blends	lb. .03¾	@	.04¼

Scrap Rubber

Scrap rubber prices continue depressed by the low quotations for the crude commodity, and at the present low levels collections are becoming increasingly difficult. The latest quotations for the different grades of scrap rubber follow:

(Prices to Consumer)

Auto tire peelings	ton 19.00	@	21.00
Mixed auto	ton 8.00	@	9.50
Bicycle tires	ton 5.00	@	6.00
Clean solid truck tires	ton 22.00	@	23.50
Boots and shoes	cwt. .87½	@	1.00
Arctics, untrimmed	cwt. .40	@	.50
Inner tubes, No. 1	lb. .03¼	@	.03⅝
Inner tubes, No. 2, compounded	lb. .01⅞	@	.02
Inner Tubes, Red	lb. .01½	@	.01⅝
Air Brake Hose	ton 9.00	@	10.00
Rubber Hose	ton 8.50	@	9.00

Cotton

PRICE quotations for cotton continued lower during the fortnight, with a general lack of investment buying and prospects for a good crop overhanging the market. That the new season is making slow progress is indicated by the fact that ginnings to September 1 amounted to only 565,160 bales compared with 1,879,919 a year ago. High exports to Japan and other Oriental countries are offset by low European shipments.

High, low and closing prices on the New York Cotton Exchange on September 19 were as follows:

	High Sept. 19	Low Sept. 19	Close Sept. 19	Close Sept. 4
Oct.	6.33	6.19	6.19	6.65
Dec.	6.54	6.40	6.40	6.89
Jan.	6.65	6.50	6.50	6.96

Tire Fabrics

Quotations for tire fabrics are continuing at low levels, owing to the depressed prices for raw cotton. Current prices for the various grades follow:

(Prices Net at the Mill)

CORD			
Peeler, carded, 28/4/3	lb. .25½	@	.26
Peeler, carded, 28/5/3	lb. .24½	@	.25
Peeler, carded, 13/3/3	lb. .22	@	.22½
Peeler, carded, 15/3/3	lb. .22½	@	.23
Egyptian, carded, 28/5/3	lb. .35	@	.36
Egyptian, combed, 28/5/3	lb. .40	@	.40½
CHAFERS			
Carded, American, 8 oz.	lb. .23	@	.23½
Carded, American, 10 oz.	lb. .23	@	.23½
Carded, American, 12 oz.	lb. .22½	@	.23
Carded, American, 14 oz.	lb. .20½	@	.21
LENO BREAKER			
Carded, American, 8¼ oz.	lb. .20	@	.25
Carded, American, 10¼ oz.	lb. .20	@	.25
SQUARE WOVEN			
Carded, American, 17¼ oz. 28-11 ply	lb. .24½	@	.25
Carded, American, 17¼ oz. 10-ply	lb. .20½	@	.21

Sheetings

Fractional declines again marked the course of the sheetings market during the past fortnight. The latest price quotations were as follows:

40-inch, 2.50-yard	yd.	— @	.06
40-inch, 2.85-yard	yd.	— @	.05⅝
40-inch, 3.15-yard	yd.	— @	.06¼
40-inch, 3.60-yard	yd.	— @	.05¼
40-inch, 3.75-yard	yd.	— @	.04⅞
40-inch, 4.25-yard	yd.	.03⅞ @	.04

Ducks

Cotton ducks were steady in price during the last two weeks, but demand continued to be light. The latest price quotations were as follows:

Belting and Hose	lb.	— @	.21
Enameling	lb.	.18 @	.19
Single filling	lb.	.08¾ @	.09
Double filling	lb.	.09½ @	.09¾

Closing Prices on Rubber Exchange of New York, Inc.

FROM SEPTEMBER 4 TO SEPTEMBER 19, 1931

		Spot	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sales
No. 1 Standard Contract of 10 Tons															
Sept.	4	4.95	4.88	4.92	4.96	5.00	5.07	5.14	5.23	5.31	5.39	5.44	5.50	5.60	58
	8	5.07	4.97	5.03	5.09	5.15	5.22	5.30	5.38	5.43	5.52	5.59	5.66	5.76	19
	9	5.12	5.10	5.13	5.17	5.20	5.27	5.34	5.42	5.48	5.55	5.62	5.70	5.79	38
	10	5.12	5.15	5.15	5.18	5.22	5.28	5.35	5.43	5.51	5.57	5.64	5.72	5.80	61
	11	5.35	5.32	5.34	5.37	5.40	5.47	5.54	5.62	5.69	5.76	5.85	5.94	6.04	180
	12	5.18	5.15	5.18	5.20	5.23	5.29	5.36	5.43	5.50	5.57	5.64	5.72	5.82	29
	14	5.12	5.02	5.02	5.08	5.15	5.21	5.28	5.35	5.42	5.50	5.57	5.65	5.75	51
	15	5.06	4.95	4.95	5.00	5.06	5.11	5.18	5.25	5.33	5.41	5.48	5.55	5.65	237
	16	5.08	5.00	5.00	5.05	5.10	5.16	5.23	5.30	5.36	5.43	5.51	5.59	5.69	45
	17	5.18	5.10	5.13	5.16	5.19	5.25	5.31	5.37	5.44	5.52	5.60	5.68	5.78	45
	18	5.12	5.05	5.07	5.09	5.12	5.18	5.25	5.32	5.37	5.43	5.51	5.59	5.69	17
	19	5.05	4.95	4.98	5.01	5.04	5.10	5.16	5.22	5.28	5.35	5.41	5.48	5.57	40
Old "A" Contract of 2½ Tons*															
Sept.	4	——	4.80	4.80	4.90	4.90	5.05	5.12	5.21	5.29	5.37	5.42	5.48	5.58	35
	8	——	4.90	4.90	4.90	5.00	5.20	5.28	5.36	5.41	5.50	5.57	5.64	5.74	—
	9	——	5.00	5.00	5.00	5.10	5.25	5.32	5.40	5.46	5.53	5.60	5.68	5.77	5
	10	——	5.10	5.10	5.10	5.20	5.26	5.33	5.41	5.49	5.55	5.62	5.70	5.78	3
	11	——	5.20	5.30	5.30	5.30	5.45	5.52	5.60	5.67	5.74	5.83	5.92	6.02	7
	12	——	5.00	5.10	5.10	5.10	5.27	5.34	5.41	5.48	5.56	5.62	5.70	5.80	2
	14	——	5.00	5.00	5.00	5.10	5.19	5.26	5.33	5.40	5.48	5.55	5.63	5.73	1
	15	——	4.90	4.90	5.10	5.10	5.09	5.16	5.23	5.31	5.39	5.46	5.53	5.63	12
	16	——	4.90	4.90	4.90	5.00	5.14	5.21	5.28	5.34	5.41	5.49	5.57	5.67	5
	17	——	5.00	5.00	5.00	5.10	5.17	5.29	5.35	5.42	5.50	5.58	5.66	5.76	—
	18	——	4.90	4.90	4.90	5.00	5.16	5.23	5.30	5.35	5.41	5.49	5.57	5.67	—
	19	——	4.90	4.90	4.90	5.00	5.08	5.14	5.20	5.26	5.33	5.39	5.46	5.55	—

*Quotations for months after December, 1931, are for New "A" Contract.

CHEMICALS

THE low August consumption of crude rubber indicated a rate of factory activity that was not very encouraging to the suppliers of chemicals and compounding ingredients to the industry. Low tire and tube inventories and the desire of rubber industry leaders to keep employment on as high a scale as possible during the winter may assist in raising the demand for such materials, however. The fortnight has seen a slight weakening in the price structure of some materials used as softeners.

ACCELERATORS

Organic				
A-1	lb.	.24	@	.27
A-5-10	lb.	.33	@	.36
A-7	lb.	.55	@	.59
A-11	lb.	.62	@	.66
A-16	lb.	.57	@	.61
A-19	lb.	.58	@	.62
A-20	lb.	.64	@	.68
A-32	lb.	.80	@	.95
Aldehyde ammonia, crystals	lb.	.65	@	.70
Altax	lb.			
Aniline oil, drums, f.o.b. works	lb.	.14½	@	.16
Captax	lb			
Crylene	lb.	.55	@	.65
paste	lb.	.45	@	.55
Di-Ortho-Tolyguanidine	lb.	.42	@	.44½
Diphenylguanidine	lb.	.30	@	.32½
Ethylidene aniline	lb.	.45	@	.47½
Formaldehyde aniline	lb.	.37½	@	.40
Heptene	lb.	.40	@	—
Hexamethylene-tetramine	lb.	.58½	@	.61
Lithex	lb.	.18	@	.20
Methylenedianiline	lb.	.37½	@	.40
Monex	lb.	3.25	@	—
Oxynone	lb.	.68	@	.80
Phenex	lb.	.75	@	—
Pipsol	lb.	4.30	@	4.50
R & H 40	lb.	.40	@	.41
R & H 50	lb.	.40	@	.41
R & H 397	lb.	.75	@	.76
R-2	lb.	1.95	@	2.15
Safex	lb.	1.20	@	1.25
SPDX	lb.	.75	@	—
Super-Sulphur No. 1	lb.			
No. 2	lb.			
Tensilac, No. 39	lb.	.40	@	.42½
Tensilac, No. 41	lb.	.50	@	.52½
Thermio F	lb.	.50	@	.55
Thiocarbanilid, drums	lb.	.20	@	.22
TMTT	lb.	3.00	@	3.25
Trimene	lb.	.75	@	—
base	lb.	1.20	@	—
Triphenylguanidine	lb.	.58	@	.60
Tuads	lb.			
Ureka	lb.	.75	@	1.00
Vulcanex	lb.			
Vulcone	lb.			
Vulcanol	lb.			
Z-88-P	lb.	.50	@	.60
Zimate	lb.			
Inorganic				
Lead, sublimed blue	lb.	.08¼	@	—
Lead, white	lb.	.08½	@	.08¾
Litharge, domestic	lb.	.07¾	@	—
Magnesia, calcined, light per 100	lb.	5.35	@	5.45
heavy per 100	lb.	3.65	@	3.75

COLORS

Blacks (See Compounding Materials)

Blues				
Prussian	lb.	.35	@	.36
Ultramarine	lb.	.06	@	.32
Browns				
Sienna, Italian	lb.	.05½	@	.12½
Umber, Turkey	lb.	.04½	@	.07
Greens				
Chrome, light	lb.	.30	@	.32
medium	lb.	.31	@	.33
dark	lb.	.34	@	.36
Chromium Oxide, bbl.	lb.	.34½	@	.35½
Reds				
Antimony crimson, 15/17	lb.	.40	@	.44
sulfur, free	lb.	.56	@	.66
golden, 15/17 F.S.	lb.	.20	@	.25
Indian English	lb.	.09	@	.11
Domestic (Maroon)	lb.	.11	@	—
Oximony	lb.	.13¼	@	—
Red oxide, pure	lb.	.10	@	.12
Smith's 444 Crimson f.o.b. Springfield	lb.	.08¾	@	.10
Rub-Er-Red, f.o.b.Easton	lb.	.08¾	@	—
Venetian red	lb.	.06	@	.06
Vermillion, quicksilver. English	lb.	1.75	@	1.80
Whites				
Lithopone, Akrolith	lb.	.05 3/5	@	.06
Lithopone, Albalith	lb.	.05¼	@	.05¾
Lithopone, Azolith	lb.	.05¼	@	.05¾
Lithopone, Vanolith	lb.	.05¾	@	—
Titanium oxide	lb.	.21	@	—
Titanox B, f.o.b. St. Louis,	lb.	.06½	@	.07
Titanox C, f.o.b. St. Louis,	lb.	.07	@	.07½
Zinc Oxide—American Process				
American Azo:				
ZZZ (lead free)	lb.	.06½	@	.07
ZZ (leaded)	lb.	.06⅞	@	.06⅞
Horsehead Brand:				
Special	lb.	.07	@	.07½
XX Green	lb.	.07	@	.07½
XX Red, lead free	lb.	.06½	@	.07
Kadox, black label	lb.	.10⅜	@	.10⅞
blue label	lb.	.09⅜	@	.09⅞
red label	lb.	.08	@	.08⅓
St. Joe, black label	lb.	.06½	@	.07
red label	lb.	.06½	@	.07
Zinc Oxide—French Process				
Anaconda, lead free	lb.	.06½	@	.07
Anaconda, selected lead free	lb.	.07	@	.07½
White seal	lb.	.11⅝	@	.11⅞
Green seal	lb.	.10⅜	@	.10⅞
Red seal	lb.	.09⅝	@	.09⅞
Yellows				
Chrome	lb.	.16½	@	.17
Ocher, French medium	lb.	.02	@	.03
domestic	lb.	.01⅝	@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85	@	24.50
Ammonia carbonate, lump	lb.	.10½	@	.12
Asbestine	ton	14.75	@	18.00
Barium carbonate	ton	56.50	@	57.00
Barium Dust	lb.	.05	@	.06
Barytes southern off-color	ton	12.00	@	18.00
Western prime white	ton	23.00	@	—
imported	ton	27.00	@	36.00
Basofor	lb.	.04½	@	—
Bentonite	lb.	.02	@	.03
Blacks				
Arrow "Aerofloted"	lb.	.03½	@	.08½
Bone Black	lb.	.06	@	.12½
Carbon, compressed	lb.	.03	@	.07
Carbon, uncompressed	lb.	.03	@	.07
Disperso, f.o.b. Louisiana	lb.	.03½	@	—
Disperso, f.o.b. Texas	lb.	.036	@	—
Drop Black	lb.	.06	@	.14
Fumonex	lb.	.03½	@	.07½
Excello, compressed	lb.	.04	@	.08
Gastex, f.o.b. Texas	lb.	.03	@	.06
Lamp Black	lb.	.10	@	.40
Micronex	lb.	.03½	@	.08½
Thermatomic-Thermax	lb.			
Flex	lb.			
P-33	lb.			
United carbon, fob Tex.	lb.	.03½	@	.03½
Velvetex carbon	lb.	.03	@	.06
Blanc fixe dry f.o.b. works	ton	75.00	@	90.00
Carrara filler	lb.	.01¾	@	.02
Catalpo (fact.)	lb.	.02	@	—
Clay, Kaolin, domestic	ton	8.00	@	9.00
Aerfloted, Suprex	ton	8.00	@	20.00
Colloidal	lb.	.05	@	.08
Congaree, c. l. f.o.b. mine	ton	9.00	@	—
Dark Blue Ridge	ton			
Dixie	ton			
Langford	ton			
Lexington	ton	10.00	@	22.00
Mineral Flour, c.l. f.o.b. mine	ton	20.00	@	23.00
Par	ton			
Tensulite		15.00	@	—
Glues, extra white	lb.	.25	@	.26
medium white	lb.	.22	@	.24
Magnesia, carbonate	lb.	.08¾	@	.11
Mica, white water grnd.	lb.	.06	@	.08
Off color (biotite)	lb.	.05	@	.07
Rotten Stone (powdered)	lb.	.02	@	.05
Soapstone, powdered	ton	15.00	@	22.00
Starch, powdered	cwt.	—	@	2.57
Talc, domestic	ton	12.00	@	15.00
Pyrax A	ton			
Whiting, commercial	cwt.	—	@	1.00
English cliffstone	cwt.	1.75	@	2.00
Quaker	ton			
Superfine	ton	10.00	@	12.00
Sussex	ton			
Witco	ton	20.00	@	—
Zinc Carbonate	lb.	.09½	@	.10½
Zinc Stearate	lb.	.19	@	.22

MINERAL RUBBER

Genasco (factory)	ton	50.00	@	52.00
Granulated M. R.	ton			
Hard Hydrocarbon	ton			
Paradura	ton	62.50	@	65.00
Parmr, solid	ton	25.00	@	48.00
Pioneer. MR, solid	ton	40.00	@	42.00
Pioneer-granulated	ton	50.00	@	52.00
R & H Hydro-Carbon	ton	27.05	@	29.00
Robertson, MR, solid	ton	34.00	@	80.00
M.R. (gran)	ton	35.00	@	80.00

SOFTENERS

Acids				
Nitric, 36 degrees	cwt.	5.00	@	5.25
Sulfuric, 66 degrees	cwt.	1.60	@	1.95
Tartaric, crystals	lb.	—	@	.29½
Acids, Fatty				
Laurex	lb.	.15	@	.16
Stearex	lb.	.13	@	.17
Stearic, double pressed	lb.	.17	@	.22
Alkalies				
Caustic soda, 76%	cwt.	2.90	@	—
Soda ash, 58% C.L.	cwt.	1.17½	@	—
Oils				
Corn, refined, bbls.	lb.	.08¾	@	.10¼
Cottonseed, crude		—	@	.04⅛
Cycline	gal.	.27	@	.34
Degras (c.l. 100 bbls.)	lb.	.03¾	@	—
Less c.l. (10-25 bbls.)	lb.	.04	@	—
Lots less than 10 bbls.	lb.	.04¼	@	.04½
Fluxrite	lb.	.05½	@	.06⅓
Palm Lagos	lb.	.05	@	.06
Niger	lb.	.04	@	.04½
Para-Flux	gal.	.17	@	—
Petrolatum, white	lb.	.08	@	.08½
Pigmentaroil	gal.	.18	@	.23
Pine, steam distilled	gal.	.54	@	.61
destructively distilled	gal.	.54	@	.55
Witco Palm Oil	lb.	.11	@	—
Witco Softener (f.o.b. wks.)	lb.	.02	@	—
Resins and Pitches				
Pitch, Burgundy	lb.	.06½	@	.07½
coal tar	gal.	.05½	@	.06
pine, 200 lb. gr. wt.	bbl.	7.00	@	—
Rosin, grade K, 280 lb.	bbl.	—	@	4.22½
Pigmentar	gal.	.18	@	.23
Tar Retort, 50 gal.	bbl.	13.50	@	15.00
Solvents				
Acetone, pure	lb.	—	@	.09¾
Alcohol, denatured, No. 1 bbls.	gal.	.28	@	.29
Benzol, 90%	gal.	.20	@	.21
Carbon, bisulfide	lb.	.05½	@	.06¼
Carbon, tetrachloride	lb.	.06¼	@	.07
Dryolene (f.o.b. Okla.)	gal.	.10	@	.10½
Gasoline, steel bbls.	gal.	.16	@	—
Naphtha, solvent	gal.	.30	@	.38
Rub-Sol (f.o.b. Okla.)	gal.	.09	@	—
Turpentine, spirits	gal.	.36¼	@	.36½
wood	gal.	.38	@	.40
destructively distilled	gal.	.35	@	—
Waxes				
Beeswax, white	lb.	—	@	.36
Carnauba	lb.	.26	@	.28
Ceresin, white	lb.	.10	@	.11
Montan, crude	lb.	.06½	@	.07
Ozokerite, black	lb.	.24	@	.25
green	lb.	.26	@	.30
Paraffin (c.l.—f.o.b. N. Y.)				
Yellow crude scale	lb.	.02½	@	—
White crude scale 124/126	lb.	.02½	@	—
Refined, 125/127	lb.	.03¾	@	—
Refined, 128/130	lb.	.03¾	@	—
Refined, 135/137	lb.	.05¼	@	—
Refined, 138/140	lb.	.07¼	@	—

ANTI-OXIDANTS

Age-Rite, Gel	lb.			
Powder	lb.			
Resin	lb.			
White	lb.			
Albasan	lb.	.70	@	.75
Antox	lb.			
B-L-E	lb.	.57	@	.60
Neozone	lb.			
Oxynone	lb.	.68	@	.80
Resistox	lb.	.54	@	.57
Stabilite	lb.	.57	@	.62
Stabilite Alba	lb.	.70	@	.75
VGB	lb.	.55	@	.66

SPECIALTIES

Aromatics—Rodo	lb.			
Sunproof	lb.	.35	@	.37½
Sponge Paste	lb.	—	@	.30
Tonox	lb.	.56	@	.60

SUBSTITUTES

Black	lb.	.08	@	.14
White	lb.	.10	@	.16
Brown	lb.	.08	@	.15

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½	@	.04½
Sulfur flour.				
Ref'n'd. 100% pure (bags)	cwt.	2.40	@	2.75
Commercial (bags	cwt.	1.75	@	2.10
Telloy	lb.			
Vandex	lb.			